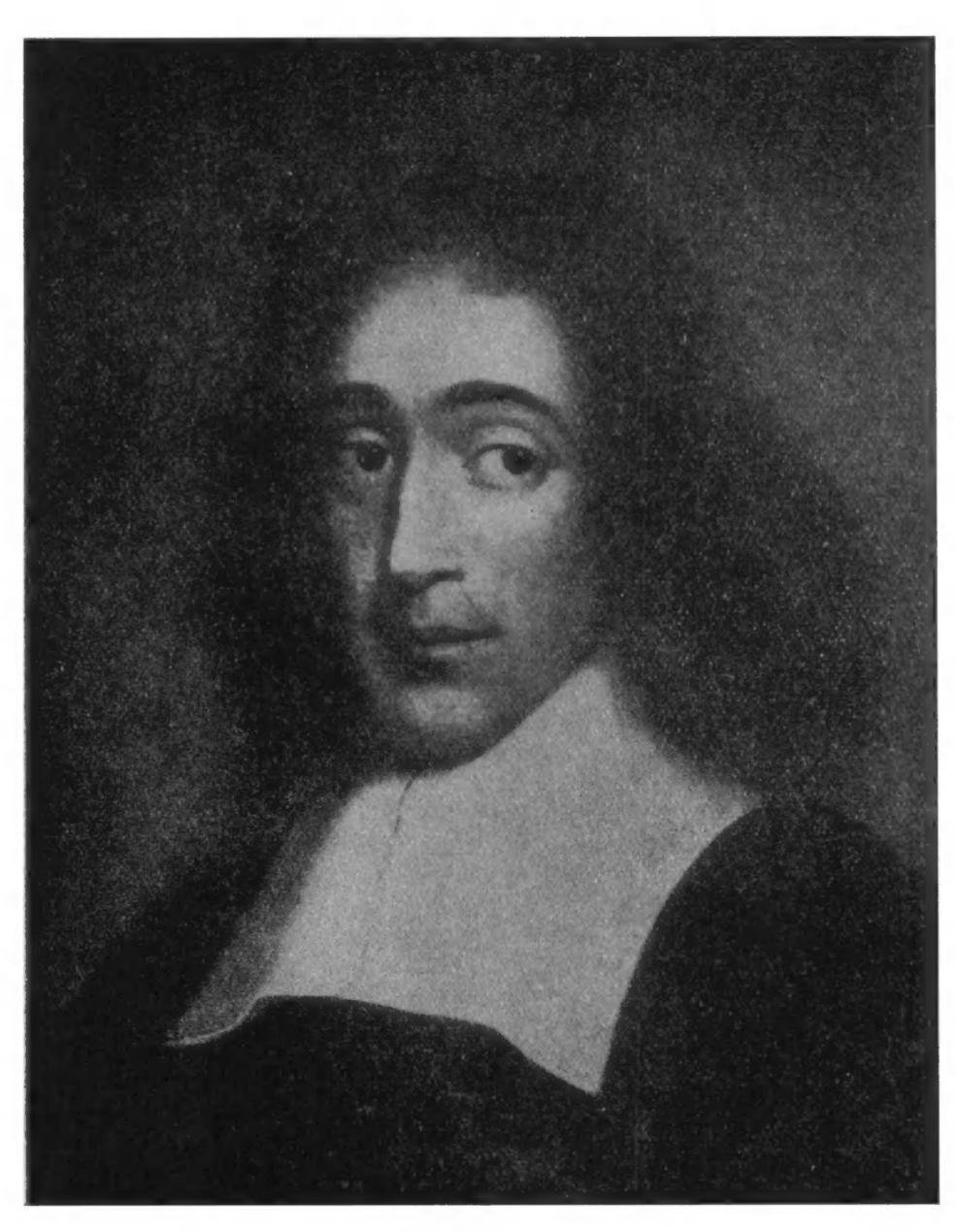
THE CORRESPONDENCE of SPINOZA



SPINOZA

(From the original portrait at Wolfenbüttel)

CORRESPONDENCE of SPINOZA

Translated and Edited with Introduction and Annotations

BY

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NEW YORK
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DEDICATED

TO

THE MEMORY OF

MY MOTHER

THERESA WOLF



PREFACE

Many years ago I proposed as the subject of my thesis for a higher degree "Some Aspects of the Philosophy of Spinoza." Two eminent scholars who were consulted about it were of opinion that everything worth saying about Spinoza had already been said. So I turned my attention to other fields of research. But when at last I was done with university examinations and degrees, I returned to Spinoza, only to find that, so far from the last word having been said, the very spade-work had not yet been done properly. Since then it has been my endeavour to do the necessary spade-work whenever I could snatch the time from other, more immediate duties. So far I have published in this connection the Short Treatise on God, Man and His Well-being and The Oldest Biography of Spinoza, both edited with introductions and annotations. I have also indicated in special papers on the subject some radical errors in the current interpretations of Spinoza's philosophy. The present volume carries the spade-work a stage farther. And I hope that circumstances may prove sufficiently favourable to enable me to complete the translation and annotation of Spinoza's complete works during the next three or four years, in time for the celebration of the tercentenary of his birth in 1932.

It has been my endeavour to make the translation at once as easily intelligible and as thoroughly reliable as possible. The translation is based on the recent Heidelberg edition of the original Latin and Dutch texts of the complete works of Spinoza; but I have used my own discretion in the choice of alternative texts and in amending a few of the readings.*

^{*} A list of these will be found at the end of the volume, after the Annotations.

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Apart from the occasional difficulties of the subjects discussed in the letters—difficulties that could only be dealt with, and are dealt with, either in the Introduction or in the Annotations—there are naturally also difficulties of translation. There are minor difficulties relating to the use of stops and of capitals, which, in all languages, was very different in the seventeenth century from what it is now; and there are more serious difficulties presented by words which have either gone out of use or have entirely changed their meaning. Wherever it could be done without risk of bewildering the reader, something of the flavour of the seventeenth century has been retained in the translation.

The irregular use of capitals can do no harm. Sometimes even unusual punctuation is harmless; but to have followed it throughout, and to have retained extremely long and complicated sentences without some simplification, could only have ended in bewildering the average reader. A few of Bacon's and Boyle's terms have been retained here and there. It would, for instance, have been a pity to drop Boyle's icicles in favour of the modern chemist's "dirt." But this kind of thing could only be done sparingly. Except in a few safe contexts it would have been risky to translate affectio by "affection," instead of by "state" or "condition." The term accidens having no exact English equivalent is translated by accident (always in italics), and explained in the Annotations. The verb determinare is usually translated by "limit," instead of by the ambiguous "determine," and is likewise explained in the Annotations. The expression intellectus is in most cases rendered by the traditional "understanding," but occasionally by "intellect," partly because it seemed somehow preferable, and partly because it seems a pity to let "intellect" go out of use.

The Introduction and the Annotations will, it is

PREFACE

hoped, be found to elucidate all that needs elucidation in the *Correspondence*. Everything of historical and scientific interest is discussed fairly fully. The comments on the more philosophical problems are limited to the immediate needs of the *Correspondence*—the fuller discussion of the most important problems being reserved for subsequent volumes devoted to the *Ethics*, etc.

The preparation of this volume has entailed much labour and research. But for the kind help of a number of friends the publication of the *Correspondence* would have been delayed considerably. I gladly avail myself of this opportunity to express my best thanks to Mr. A. Armitage, Mr. F. W. Chapman, Professor P. Geyl, Mr. D. McKie, Miss I. V. Scowby, and Mr. W. G. van der Tak.

A. WOLF

University of London, November, 1927.



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Present No.	Former No.	Present No.	Former No.	Present No.	Former No.
I	I	xxx		LVIII	LXII
II	II	XXXI	XIV	LIX	LXIII
III	III	XXXII	xv	LX	LXIV
IV	IV	XXXIII	XVI	LXI	XVII
\mathbf{v}	V	XXXIV	XXXIX	LXII	XVIII
VI	VI	XXXV	XL	LXIII	LXV
VII	VII	XXXVI	XLI	LXIV	LXVI
VIII	XXVI	XXXVII	XLII	LXV	LXVII
IX	XXVII	XXXVIII	XLIII	LXVI	LXVIII
X	XXVIII	XXXIX	XLIV	LXVII	LXXIII
XI	VIII	XL	XLV	LXVIIA	_
XII	XXIX	XLI	XLVI	LXVIII	XIX
XIII	IX	XLII	XLVIII	LXIX	
XIV	X	XLIII	XLIX	LXX	
$\mathbf{x}\mathbf{v}$		XLIV	XLVII	LXXI	XX
XVI	XI	XLV	LI	LXXII	
XVII	XXX	XLVI	LII	LXXIII	XXI
XVIII	XXXI	XLVII	LIII	LXXIV	XXII
XIX	XXXII	XLVIII	LIV	LXXV	XXIII
XX	XXXIII	XLVIIIA		LXXVI	LXXIV
XXI	XXXIV	XLIX		LXXVII	XXIV
XXII	XXXV	L	L	LXXVIII	XXV
XXIII	XXXVI	LI	LV	LXXIX	
XXIV	XXXVII	LII	LVI	LXXX	LXIX
XXV	IIX	LIII	LVII	LXXXI	LXX
XXVI	XIII	LIV	LVIII	LXXXII	LXXI
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Table Showing the Former Number of each Letter (in Editions before 1882) and its Present Number.

Former No.	Present No.	Former No.	Present No.	Former No.	Present No.
I	I	XXVI	VIII	LI	XLV
II	II	XXVII	IX	LII	XLVI
III	III	XXVIII	X	LIII	LXVII
IV	IV	XXIX	XII	LIV	LXVIII
\mathbf{v}	v	xxx	XVII	LV	LI
VI	VI	XXXI	XVIII	LVI	LII
VII	VII	XXXII	XIX	LVII	LIII
VIII	XI	XXXIII	XX	LVIII	LIV
IX	XIII	XXXIV	XXI	LIX	LV
X	XIV	XXXV	XXII	LX	LVI
XI	XVI	XXXVI	XXIII	LXI	LVII
XII	XXV	XXXVII	XXIV	LXII	LVIII
XIII	XXVI	XXXVIII	XXVII	LXIII	LIX
XIV	XXXI	XXXIX	XXXIV	LXIV	LX
XV	XXXII	XL	XXXV	LXV	LXIII
XVI	XXXIII	XLI	XXXVI	LXVI	LXIV
XVII	LXI	XLII	XXXVII	LXVII	LXV
XVIII	LXII	XLIII	XXXVIII	LXVIII	LXVI
XIX	LXVIII	XLIV	XXXIX	LXIX	LXXX
XX	LXXI	XLV	XL	LXX	LXXXI
XXI	LXXIII	XLVI	XLI	LXXI	LXXXII
XXII	LXXIV	XLVII	XLIV	LXXII	LXXXIII
XXIII	LXXV	XLVIII	XLII	LXXIII	LXVII
XXIV	LXXVII	XLIX	XLIII	LXXIV	LXXVI
XXV	LXXVIII	L	L	J	



THE correspondence of Spinoza is deeply interesting in many ways. It presents a pageant of the leading types of seventeenth-century mentality. It affords contemporary glimpses of important scientific researches and discoveries. It brings us into touch with some of the social and political events and tendencies of the period. It throws a flood of light on the pains and vicissitudes which accompanied the birth of the modern spirit and the emancipation of Western thought from the chains of authority and tradition, to which it had grown so accustomed as almost to dread to venture on the uncharted sea of Freedom. The letters contain things of first-rate importance for the correct interpretation of the philosophy of Spinoza; and, above all, they help one to realize something of the greatness and strength of his character—one of the greatest in the whole history of mankind.

It is well known that the study of Spinoza's writings left a profound and lasting impression on great men like Lessing, Goethe, Huxley, and many others. But the correctness or justification of that impression has sometimes been challenged. It has been suggested that the impression may have been due in large measure to the impressionable phantasy of the recipients. Spinoza's correspondence, however, taken in conjunction with his Oldest Biography by Lucas, conclusively refutes the challenge. They show that it was precisely such a profound impression that personal contact with Spinoza left on the minds of lesser and less imaginative people like Oldenburg, De Vries, Jelles, Schuller, and Lucas. The letters, moreover, not only show that such an impression was produced by personal intercourse with

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Spinoza, they also help to explain how and why it was produced. For they reveal, not only his wisdom and tact and unselfish devotion to the pursuit of knowledge, but also his amazing patience with the most trying bores, his calm indifference to the tactlessness or vulgarity of others, his painstaking endeavours to enlighten some of his superstitious correspondents, his constant readiness to help all who avowed an interest in the search for Truth, and withal his outspoken candour and his dislike of all prevarication, even at the risk of estranging some of his oldest friends. These things help one to appreciate the remark which Goethe made to Lavater about a hundred years after the death of Spinoza. "His correspondence," said Goethe, "is the most interesting book one can read in the world of uprightness and of humanity." *

^{*} Goethe's Gespräche, Woldemar Frhr. von Biedermann. Ed. 1909, vol. i, pp. 35 f.

§ 1. THE SEVENTEENTH CENTURY

THE seventeenth century marked the climax of that revolt against mere authority and tradition which the Reformation and the Renaissance had initiated. Descartes (1596–1650) was in many ways typical of that century, both in its strength and in its weakness. He voiced its battle-cry of universal doubt—de omnibus dubitandum—and his scientific and mathematical achievements hold a place of honour in that golden age of the revival of science. For many centuries the spirit of man had been at once guided and restrained by the reins of authority and tradition, and would not believe its own eyes unless confirmed by some authority, religious or secular. Gradually, however, there arose a succession of adventurous spirits who escaped from the leading-strings and restraints of tradition and authority, and endeavoured to see things for themselves, and to make their orientation in the light of their own capacities. In this way Galilei accepted the reality of sunspots because he saw them with his own eyes aided by the telescope, and was not shaken in his belief merely because it was not confirmed by the authority of Scripture or of Aristotle. In this way likewise he embraced the heliocentric hypothesis, in spite of Scripture and tradition, though the Church was sufficiently powerful to extort a lip-recantation, and to enforce exile and silence. In this way also many people, prompted by their inner conscience, forsook powerful and authoritative Churches, Roman and Protestant, in order to follow the guidance of their own inner light.

But the revolt had its limitations—serious limitations. Descartes' summons to universal doubt was a flourish rather than a serious call to arms. It is almost pathetic

to witness how easily his doubts were satisfied. It is almost comical to see how he strains at a gnat and swallows a camel; how he declines to believe in the reality of observed objects, yet readily accepts the reality of a supernatural Deity whom he promptly burdens with the responsibility for all Cartesian beliefs and fancies. No Church dignitary ever exploited God as a very ready help in time of trouble more than Descartes did. If his scientific endeavours require the existence of bodies or of souls, he makes God create them out of nothing. If the bodies need motion and rest to account for their appearances, he makes God endow them with motion and rest. If he finds it convenient to assume the constancy or conservation of motion and rest, he makes God constant or consistent in His relation to motion and rest; and so on. For Descartes the phenomena of Nature are essentially miraculous—that is, the result of the incessant interference of a supernatural Deity. When we have given him all the credit that is due to him for his great achievements in mathematics, in optics, etc., it remains true that fundamentally he remained the loyal disciple of his Jesuit College—his ultimate philosophic orientation is essentially the same as that of the miracle-mongering Church. And Descartes' real achievements were in the domain of Science rather than in that of Philosophy.

Some people may feel tempted to vindicate Descartes the philosopher at the expense of Descartes the Roman Catholic. They may argue (as indeed some people have argued) that Descartes' profession of faith in the three miracles—namely, creation out of nothing, free-will, and the God-man—and his other Christian professions were but lip-professions intended to save his skin from an all-powerful and none too scrupulous Church—in short, they were of the same order as his escape to Holland. They may point out that it was in Descartes'

lifetime that Giordano Bruno was burned at the stake and Galileo Galilei was humiliated, imprisoned, and exiled for intellectual boldness, and that the moral of these tragedies was probably not lost on Descartes. But there is little or no evidence in support of this contention. We can only deal with his writings as he left them. And there are other cases in which initial or tentative sceptics and other bold thinkers soon flagged in spirit at sight of uncharted seas, and gladly returned to the sheltered and familiar havens of authority and tradition. Some of Spinoza's correspondents, as we shall see presently, were men of this type, even if they were not all as distinguished as Descartes.

It is a serious disadvantage resulting from the great outward triumph of Christianity that the thinkers of Christendom rarely come into vital contact with other religions and other modes of world orientation. The consequence of this inexperience is that Christian ways of looking at the world are assumed to be true as a matter of course, at all events after a little doctoring by means of the various specifics furnished by Christian apologetists and other dilettante philosophers. Custom is mistaken for conviction, and conviction for demonstration. Add to this the fact that really independent and plausible world-views are very rare, because they are so difficult, and that scepticism (or the refusal to take one's orientation, or to embrace some existing world-view or other) is not a bed of roses, but a bed of thorns for most people, and it becomes sufficiently intelligible why born Christians mostly remain Christians willy-nilly. The philosophy of Christendom is thus prejudiced, more or less, from the start, and its acrobatics are in some ways truly amazing. Earlier, less sophisticated Christians, who still had confidence in human capacity for knowledge, regarded Faith (that is, of course, Christian Faith) as a means to Knowledge; they pro-

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fessed to believe in order that they might know. But modern, more sophisticated Christians find it necessary to shatter Knowledge in order to save Christian Faith. The modesty of this scepticism only veils the conceit of an exclusive revelation. From the "critical" Kant to our "sceptical" Lord Balfour, to say nothing of the army of professional, professorial philosophers at the universities of Christendom, the customary slogan is not "have Faith that you may attain to Knowledge," but "shatter Knowledge that you may lie at ease in Faith."

The slogan, of course, is much older than Kant. We shall find it set out at great, tedious length in the letters of Burgh and of Steno. Both Burgh and Steno appear to have been stirred in their early years by the new spirit of the age. They, too, had set out in search of undiscovered truth. But the buffetings of the open sea were too much for them, and both sought refuge in the Roman Catholic Church. There they found peace (though we do not know for how long), and no doubt it was a kindly thought which prompted each of them to write to Spinoza, their former captain, in a vain attempt to persuade him to seek salvation after their fashion. They had no idea of the mettle of a rare, independent spirit like Spinoza. There were others, of course, somewhat hardier characters than Burgh and Steno. There were people like Boyle and Oldenburg, Velthuysen and Blyenbergh, who wished to make the best of both worlds, and wanted to be at once philosophers and Christians, but Christians first of all. This was stated explicitly by Blyenbergh, who was less intelligent but more candid than the others.

Such, in brief, was the Christian atmosphere in which the philosophy and the science of the seventeenth century breathed. The mentality of that century is much misunderstood when its science and its philosophy are divorced from its theology. It is easy enough to

praise and to extol the scientific work of talented investigators like Boyle, or of geniuses like Kepler and Newton, and, of course, they do, indeed, deserve all praise for their achievements; but to understand them adequately and justly it is necessary also to study their theological writings, and then one realizes the exaggerations in the usual accounts of the boldness and daring and

originality of seventeenth-century thought.

It would be no exaggeration to say that Huxley's ideal of a man of science, as one who sceptically scrutinizes the credentials of all beliefs before embracing them, was but rarely realized even approximately in the seventeenth century. The Cartesian proclamation of universal doubt (de omnibus dubitandum), as will be explained presently, was not really meant, or taken, very seriously. Much more characteristic of the period was the attitude of a man like Hugo Boxel, a statesman and man of the world who believed in ghosts and spooks, and considered himself fully justified in believing in them until their existence could be disproved. The question asked, by those who asked questions at all, was not why they should believe this or that, but why they should not believe it. In all matters within the Christian universe of discourse, in all matters which (like ghosts, evil spirits, witches, etc.) seemed to be sanctioned by the Scriptures, even comparatively enlightened people felt justified in believing in them so long as others could not absolutely disprove them.

The boldest and most original thinker in the seventeenth century was Spinoza, who stood above the theological prejudices from which the others could not

entirely extricate themselves.

Needless to say, in speaking of the Christian atmosphere of the seventeenth century, the reference is to Christian dogmas, not to Christian charity, of which, alas! there was as little in the seventeenth century as there is in the twentieth.

§ 2. DESCARTES AND SPINOZA

By proclaiming universal doubt to be the first step to a genuine philosophy, and by insisting on clear and distinct ideas as the condition of real knowledge, Descartes certainly rendered a great service to the revival of philosophy. But his importance in the history of philosophy has been grossly exaggerated. The exaggeration is due to a variety of reasons, only some of which need detain us here.

In the first place, he was held in high esteem by many of his contemporaries. This was natural and right. For the seventeenth century did not yet distinguish between science and philosophy as we do nowadays. In the seventeenth century all that is now called science was just part and parcel of philosophy, and so long as Descartes the philosopher included Descartes the man of science, Descartes deserved all the praise he received as the hero of "the new philosophy." The moment, however, his contributions to science are divorced from his contributions to philosophy, as, of course, they are when we speak of philosophy in the present-day sense of the term, the position is greatly altered. However much we may praise his contributions to science, it is really impossible to rank very highly his contributions to philosophy properly so called.

In the second place, the exaggeration of Descartes' merits as a philosopher is due to a natural Christian bias. The very fact that he set out, or at least professed to set out, with a thoroughgoing methodological scepticism, and nevertheless ended as a loyal Christian, made him especially dear to the philosophers of Christendom, obsessed as nearly all of them have been and still

are with Christian ideas, as was explained in the preceding section. Hence this attempt to make him the very source and inspiration of all modern philosophy. Spinoza, a Jew, and an excommunicated Jew to boot, Spinoza the reputed atheist and what not, was under the circumstances not likely to be treated as anything but a Cartesian oddity or aberration.

In the third place, under the influence of Hegel and of the magic of Hegelian dialectic, it became the fashion to present the later phases of modern philosophy as a mere unfolding of its earlier phases. And so it came about that the philosophy of Spinoza, like that of Malebranche and of others, was regarded merely as a form of Cartesianism. Look at the earlier editions of Kuno Fischer's great History of Modern Philosophy, and you will find that Spinoza was included in the school of Descartes. In the Encyclopædia Britannica as late as the thirteenth edition the philosophy of Spinoza was described under Cartesianism. And these works are typical of most works dealing with the history of modern philosophy. It was not very difficult to represent Spinozism as a transformation of Cartesianism. Historians of philosophy, trained in the subtleties of Christian theology, had no misgivings about representing Spinozism as the transubstantiation of Cartesianism. Philosophers skilled in the tricks of Hegelian dialectic readily perceived in the Spinozistic antithesis to Cartesianism the crowning phase thereof.

Another factor which helped to perpetuate the exaggerated estimate of Cartesianism at the expense of Spinozism is the easy intelligibility of Descartes' Discourse on Method and his Meditations, in contrast with the difficulty of Spinoza's writings. Students of philosophy and even others had no difficulty in reading, and more or less understanding, the Method and the Medita-

CORRESPONDENCE OF SPINOZA

very difficult to know Spinoza at first hand, so they rely on second or even fifth-hand information, and in this

way help to maintain old superstitions.

But let anyone take a simple inventory of the fundamental notions in the philosophy of Descartes and in that of Spinoza; let him compare them frankly and candidly, without theological subtleties or dialectical sophistications, and he will be amazed at the impertinence of the old legend. What was Descartes' idea of God but that entertained by any ordinary Christian and by many others? What were his notions of Extension and of Thought but the ordinary ideas of two classes of realities, namely, bodies and souls, arbitrarily created out of nothing by a supernatural God, and arbitrarily controlled by Him? How entirely different is the Spinozistic conception of God as identical with the infinite Universe, in which nothing ever happens arbitrarily, and of which Extension and Thought are Attributes whose finite modes or modifications are the bodies and souls of ordinary thought and experience! These differences are palpable, and there are others just as palpable, as may be seen from some of the letters which follow.

Moreover, as is clear from his correspondence, Spinoza himself and many of his contemporaries were fully aware of these antagonisms between his philosophy and that of Descartes. Spinoza's letters to Meyer and to Oldenburg show this, and so, in a very remarkable manner, does the letter from Steno, who addressed Spinoza, not as the follower or teacher of the "new philosophy" (that is, Cartesianism), but as the "Reformer" thereof—a term not suggestive of an amicable relationship when used by a fervent Catholic in the seventeenth century. And the earliest biographer of Spinoza, too, refers to the hostility of the Cartesians

against Spinoza.* The subtle juggling by which Spinozism has been read out of Cartesianism, by suitable adjustments of both, has only resulted in a misinterpretation of both these systems.

* See The Earliest Biography of Spinoza, edited and translated by A. Wolf, pp. 74 f., and Letter LXVIII.

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§ 3. OLDENBURG, BOYLE, AND SPINOZA

About a third of all the existing correspondence of Spinoza consists of letters which passed between him and Oldenburg. It is obvious, moreover, that many more letters, now unfortunately lost, must have passed between them. Oldenburg must therefore be regarded as Spinoza's principal correspondent, as well as the first whose letters have come down to us. For this and for other reasons, he is clearly entitled to special consideration in connection with the study of the correspondence of Spinoza.

HENRY OLDENBURG (? 1615-77) was born in Bremen, where he also studied, graduating as Master in Theology in 1639. His degree thesis dealt with the problem of the relation between Church and State. He came to England about 1640, and appears to have stayed here until 1648. He then travelled about on the Continent, and returned to Bremen about 1652. During the war between England and Holland, following England's enforcement of the Navigation Act in 1651, the shipowners of Bremen suffered in various ways. So in the summer of 1653 the Council of Bremen sent Oldenburg to negotiate with Cromwell and make arrangements whereby the neutrality of Bremen should be respected. Oldenburg stayed in England, engaged partly in diplomatic work and partly in teaching. One of his pupils was Robert Jones, nephew of Robert Boyle, with whom he thus became acquainted. From 1657 till 1660 he travelled with his pupil on the Continent, and made the acquaintance of many scholars. In 1661 he visited his native town, and from there he went to Leyden, where he looked up his fellow-townsman, Johannes Coccejus,



OLDENBURG

(From the portrait at the Royal Society)



Professor of Theology at the University there. Spinoza at that time was living at Rhynsburg, near Leyden, and Oldenburg's eagerness to get to know men of promise may be gathered from the fact that he specially sought out Spinoza in his humble out-of-the-way lodging, and had a long talk with him. Oldenburg's early letters to Spinoza show what a deep impression the much younger man had made on him. In this way Spinoza was brought into touch with the work of the Royal Society, and more especially with the work of Robert Boyle, of which more will be said presently.

When the Royal Society received its Charter of Incorporation in July 1662 Oldenburg was appointed secretary (jointly with Dr. J. Wilkins), and he promptly set about mobilizing "a commerce in all parts of the world with the most philosophical and curious persons to be found everywhere," in order to carry out the design of the members of the Royal Society, who (to quote his own words again) "have taken to task the whole universe." This involved an enormous amount of correspondence for those days. Our present abundance or superabundance of learned and scientific periodicals was unknown in the seventeenth century. The function which they perform now was carried out in those days by letters, which were frequently not letters in the modern sense, but dissertations, "epistolary dissertations" (to use Malpighi's phrase). Some of the letters which passed between Oldenburg and Spinoza were obviously such "epistolary dissertations." They concerned, however, Boyle rather than Oldenburg, who acted as intermediary between Boyle and Spinoza.

In view of subsequent events it must be said that Oldenburg's early letters to Spinoza are remarkable for their impetuous devotion to new discoveries as well as for their homage to Spinoza. They display a curious reversal of rôles, inasmuch as they show us the much

older man urging the younger man boldly to spread the sails of the new learning, to cease humouring ignorance and pedantry, and to defy the pigmy theologians. But the spirit of Oldenburg soon flagged after his sad experiences during the plague of London in 1665, the great fire in 1666, and his imprisonment in the Tower of London in 1667. The atmosphere of suspicion, distrust, and hatred which war produces is too well known to need description. Even in the twentieth century the Churches could not or would not seriously attempt to drive out the evil spirits let loose by war, so why expect the seventeenth century to have coped more successfully with the loathsome progeny of Mars? The war between England and Holland (1665-67), coupled with the plague and the great fire of London, certainly tended to upset people's mental equilibrium. Oldenburg's vast foreign correspondence was naturally suspected at Court. The king was himself too great an adept at intrigue not to distrust everybody else. So in June 1667 Oldenburg was clapped into the Tower, where he stayed two terrible months, and might have stayed much longer but for the termination of the war. Oldenburg left his prison a sadder and much more cautious, indeed a very nervous, man, and when, after a break of about ten years, he wrote again to Spinoza, he had changed almost entirely from his former self, partly perhaps under the reactionary influence of Boyle.

ROBERT BOYLE (1627-91) was the seventh son of the Earl of Cork. He was born in Ireland, studied at Eton, and then travelled on the Continent. He was in Italy in the year in which Galilei died and Newton was born (1642), and he returned to England in 1644, just about the time when the Philosophical or "Invisible" College was started. About his important contributions to science something will be said in the next section

and in the Annotations. Here we are more concerned with the less meritorious side of his personality.

Like Oldenburg, Boyle was at least as much interested in theology as in science, perhaps even more so. Some of his early experiences are rather significant in this connection. At the age of fourteen he passed through the experience of religious "conversion," or re-birth, in consequence of an awful thunderstorm which he witnessed. His escape from this thunderstorm he attributed to the direct interposition of Providence. Nay, more, already at the age of ten he had actually imposed on himself some disciplinary tasks in arithmetic and in algebra as a penalty for the restless feelings stirred in him when, during his convalescence, he had read the romance Amadis de Gaula! Later on he never missed an opportunity of spreading a knowledge of the Gospels, and he spent much money in getting them translated and printed in various languages. Eventually he founded and endowed the "Boyle Lectures"—courses of lectures to be delivered annually for proving the truth of Christianity against "notorious infidels, namely, atheists, theists, pagans, Jews, and Mohammedans." He also stipulated that no reference should be made in these lectures to controversies between Christians. Such was the spirit of Christian charity and candour as Boyle understood it. What understanding could he possibly have for Spinoza? No wonder that, notwithstanding all the external shows of courtesy, Boyle never wrote directly to Spinoza. It is even possible that the foundation of the Boyle Lectures was partly due to Boyle's conception, or rather misconception, of Spinoza's philosophy, especially of his Tractatus Theologico-Politicus, coupled, however, with "the shades of doubt," which, as Boyle admitted, "did sometimes cross his mind." It is certainly a fact that at least two series of Boyle Lectures were directed against Spinoza,

namely, Samuel Clark's Demonstration of the Being and Attributes of God: More Particularly in Answer to Mr. Hobbs, Spinoza, and their Followers (1704), and B. Guerdon's Boyle Lectures (1721, 1722).

Boyle and Oldenburg were so steeped in Christian prejudices that they seemed utterly incapable of understanding Spinoza's thought, let alone sympathizing with it. And with the increasing conservatism characteristic of increasing age their estrangement from him increased likewise. When after a great deal of beating about the bush Oldenburg was at length brought to express explicitly his real objections to Spinoza's philosophy, it turned out that he had actually expected Spinoza to write a philosophic defence of orthodox Christianity-in other words, to deliver advance "Boyle Lectures"! Enlightened Christians, as well as cynics, may find food for thought in this utter incapacity of two good and able men like Boyle and Oldenburg to understand a still better and abler man like Spinoza.

§ 4. THE SCIENTIFIC BACKGROUND OF SPINOZA'S CORRESPONDENCE

Already before Descartes the revolt against mere authority and tradition in the realm of Knowledge had been voiced eloquently and persuasively by Francis Bacon (1561-1626), who elaborated a comprehensive scheme of experimental research worthy of a Lord Chancellor. His plea bore fruit eventually in the shape of a "Philosophical College," which was started, about 1645, for the promotion of experimental science. Its members met frequently in the City of London, or in Oxford, to carry out experiments and to discuss their significance. This somewhat nebulous society, sometimes called the "Invisible College," assumed more definite shape in 1660, became known as the "Royal Society" in the following year and received its Charter of Incorporation on July 15, 1662. Robert Boyle was one of its original and most influential members, and Henry Oldenburg its first Secretary.

The primary aim of the Royal Society was the improvement of natural knowledge by experiments, as distinguished from airy scholastic discussions based on authorities. But the significance of the stress on experiment must not be exaggerated. The divisions between what are now regarded as distinct sciences were few and vague then. Even the present distinction between science and philosophy was very nebulous at that time, a fortiori the difference between experimental and non-experimental science, or between the experimental and the non-experimental sides of the same science. The very ambition of the society tended to leave all such differences on one side. Like its patron-saint Bacon, who had taken all knowledge for his province,

the Royal Society took the whole universe to task, and did not at first trouble much about mapping out different fields of inquiry, according to the different nature of the phenomena concerned and of the methods applicable.

As already stated, it fell to Oldenburg to "purchase and entertain a commerce in all parts of the world with the most philosophical and curious persons to be found everywhere." In fact, he had done so already before the Royal Society was fully constituted—and that was probably the reason why he was appointed its secretary in 1663. Thus it came about that, like many others, Spinoza was drawn into the activities of the society, sending lengthy criticisms on Boyle's experiments, communicating information about the scientific activities of Christian Huygens in connection with dynamics, optics, horology, etc., or about continental views on the comets, and so on. It is one of the minor ironies of history that while Oldenburg was searching the whole Continent for new light on Boyle's experiments on nitre, etc., highly relevant facts nearer home were entirely overlooked. If properly appreciated, Mayow's experiments on oxygen, which were carried out in Oxford, would have put a new complexion on Boyle's experiments with nitre; but they passed unnoticed. In fact, Boyle did not appreciate in this connection the bearing even of his own experiments on the function of air in combustion.

The discussions between Boyle and Spinoza are of some interest for the student of the history of science. They throw no little light on the scientific tendencies of the seventeenth century and on the intellectual attitude of some of its leaders in the domain of science. Boyle may well be described as the scientific executor of Bacon's last will and testament. To some considerable extent he certainly did help to give practical effect to Bacon's designs. And Boyle's own work at once shows

the strength and betrays the weakness of the Baconian method-its strength, as an aid to methodical observation and experiment, its weakness in not appreciating sufficiently the supreme importance of illuminating ideas. Like that incomparably greater genius, his younger contemporary, Newton, Boyle fought shy of ideas which were not immediately forced upon him by direct observations. Both were orthodox Christians, quite content to draw upon Scripture for all their more comprehensive cosmic thoughts. Fortunately for them, and for science generally, a great deal of physical, chemical, and astronomical research has no direct bearing on religious problems or philosophical worldviews. Boyle's services are strictly confined to this region. His excursions into wider questions were few and clumsy. Spinoza, on the other hand, was a philosopher first and foremost. He was certainly interested also in science, in the narrower sense of the term. He did valuable work in applied optics, and, as his letters show, he carried out various chemical and physical experiments, as far as his very limited time and means allowed. He also dealt with the problem of the rainbow, and with that of probability, or the calculation of chances. But his interests were mainly directed to the wider issues involved—issues for which Boyle had little understanding and less appreciation. So the two were not likely to pull well together. Spinoza, indeed, recognized and appreciated the importance of such detailed observations and experiments as Boyle was carrying out and recording. But he also realized their shortcomings, and was candid enough to express his thoughts. Boyle, like so many people who invite criticism and only expect praise, appears to have been somewhat irritated by Spinoza's comments.

The most important aspect of the discussion between Boyle and Spinoza was that concerning the problem of

the mechanical interpretation of natural phenomena a problem of perennial interest. Boyle professed to be a firm believer in what he called "the tenets of mechanical philosophy." By the mechanical philosophy Boyle meant the attempt to explain the phenomena of Nature "by little bodies variously figured and moved"—hence also the name "Corpuscular (or Corpuscularian) Philosophy." This point of view, according to Boyle, was common both to the Atomists and the Cartesians. The Cartesian conception of the ultimate constitution of matter (extension) was indeed very different from that of the Atomists. But these remoter questions were of no interest to Boyle. So far as the immediate needs of scientific explanation were concerned both schools of thought were in essential agreement. And Boyle believed that Chemists and Mechanical (or Corpuscularian) Philosophers ought to come to a mutual understanding, for they could help each other: the corpuscular philosophy could help to explain plausibly many chemical phenomena, while chemists could furnish many experiments in illustration and in confirmation of the corpuscular philosophy. It was in this spirit that Boyle carried out the experiments described in Certain Physiological Essays (1661). Spinoza with his thoroughgoing naturalism was, of course, in favour of this method of explaining material phenomena, but he saw its implications better than Boyle did. Boyle was quite content to employ mechanical and teleological explanations side by side. To Spinoza it quite rightly appeared to be incongruous to explain physical phenomena by reference to their alleged purposes, or ends, while professing the tenets of a thoroughgoing mechanical philosophy, which should explain them only by means of corpuscles, figures, and motions. Here already we see at a glance the difference between the broader outlook of Spinoza and the more limited or restricted outlook of Boyle.

The mechanical tendency in modern science owed its vogue, in large measure, to Galilei, the father of modern dynamics. He insisted on explaining physical phenomena by means of primary or mechanical qualities (that is, the geometrical qualities and motion); and he regarded the secondary or sensible qualities of things (colour, sound, etc.) as subjective effects of primary qualities. One important result of this whole movement was a certain enlightenment of science, its emancipation from more or less mysterious forms, occult qualities, chemical principles, etc., which facilitated pseudoexplanations of natural phenomena, and so discouraged methodical, intelligent research. Boyle's adhesion to the mechanical philosophy meant no more than that he was opposed to the aforementioned pseudo-scientific explanations and mystifying hocus-pocus; and his work as a chemist was perhaps all the better just because he did not fully realize the implications of a thoroughgoing mechanical philosophy, and so did not endeavour to carry it through consistently. It has taken more than two centuries for men of science to realize that it is impossible to explain even simple chemical phenomena, let alone extremely complex biological ones, on strictly and purely mechanical lines. The conception of the "creative evolution" or "emergence" of results incapable of a purely mechanical explanation has become a commonplace now, thanks to the influence of Professor Bergson and of Professor Lloyd Morgan, and Boyle may claim some credit for originating this conception, which is implicit in his distinction between a (mechanical) mixture and a (chemical) compound. Methodologically, however, the regulative notion of a mechanical explanation may still perform the same useful function which it had in the seventeenth century, namely, to exorcise sheer hocus-pocus and to prevent mere mystification from masquerading as scientific explanation.

§ 5. HUDDE, BOXEL, BURGH, LEIBNIZ, TSCHIRNHAUS

OTHER correspondents, besides Boyle and Oldenburg, with whom scientific interests brought Spinoza into touch, were Hudde, Leibniz, and Tschirnhaus. Evidently Spinoza had early acquired a reputation for his knowledge of optics and his skill in grinding and polishing lenses, by which he gained his daily bread. Since Galilei's use of the telescope for astronomical observation, interest in optics had become widespread and fashionable. Not only scientists like Galilei, Descartes, and Christian Huygens wrote treatises on optics, but even statesmen like Sir Constantyn Huygens and Burgomaster Hudde were sufficiently interested in the subject to write about it. Possibly Spinoza's acquaintance with Hudde was mediated by Christian Huygens (1629-85), famous in the history of science as the discoverer of the rings of Saturn, as the originator of the undulatory theory of light, and the inventor of the pendulum clock. During the years 1664-66 Spinoza lived within easy walking distance of Huygens, and the two must have got to know each other fairly well, for Huygens in his subsequent letters to his brother referred to Spinoza several times, and wanted to be informed of Spinoza's doings.

JOHAN HUDDE was born in Amsterdam in 1628, and died there in 1704. He entered the University of Leyden in 1654 as a medical student. In 1667 he joined the governing body of his native city; in the following year he became Sheriff; and in 1672 he was elected Burgomaster, or Mayor, an office to which he was subsequently re-elected no less than eighteen times.

He is known to have been interested in physics and mathematics, more particularly in optics and in the calculus of probability. These interests probably brought him into touch with Huygens, and through him with Spinoza. As a member of the States of Holland, Hudde would frequently visit The Hague, which was the seat of government, and so would have frequent opportunity of meeting Spinoza, who lived in Voorburg, near The Hague, from 1663 till 1670, and in The Hague itself from 1670 until his death in 1677. Hudde, unlike Huygens, was interested in philosophy as well as in science, and the extant three letters which Spinoza addressed to him deal mainly with the conception of God.

Spinoza's letter to Oldenburg, written in July 1663, shows how necessary Spinoza found it to secure the protection of influential statesmen before venturing to publish his own views on philosophy and religion, which were sure to arouse the hostility of the Calvinist clergy. Maybe Hudde supplied the need, and obtained for Spinoza the friendly interest of ex-Burgomaster Coenraad van Beuningen and of Jan de Witt, the ill-

fated Grand Pensionary of Holland.

Hugo Boxel was another of Spinoza's correspondents who belonged to the governing classes of Holland. In 1655 he was appointed Secretary to his native city Gorkum. Four years later he was elected Pensionary thereof, and held this responsible office until 1672. In that year, in consequence of the murder of the De Witts and the connected political changes, Boxel was deprived of his post. It is not known how he became acquainted with Spinoza, but he probably had something to do with Spinoza's visit to the French camp at Utrecht in 1673. For Boxel is known to have favoured the policy of a Dutch understanding with France. His firm belief in ghosts, evidenced by his letters to Spinoza, is





FABRITIUS



THE HON. ROBERT BOYLE



JOANNES HUDDE



GOTTFRIED WILHELM LEIBNIZ

a potent reminder of the character of his age. Even a worldly, enlightened man like Boxel considered it perfectly reasonable to believe things so long as no conclusive evidence could be brought against them. Even men of science were no better then in such matters, and were very remote from Huxley's ideal of a man of science. Spinoza was one of the very few men of his time who asked to know the reasons why he should believe what was not evident, instead of waiting for others to submit reasons why he should not believe it. The fact that Scripture appeared to sanction the belief in the existence of spirits, etc., was sufficient for most people to confirm their belief in such things.

Conraad Burgh was another influential member of the governing classes whom Spinoza got to know somehow. He was one of the wealthiest citizens of Amsterdam, and in 1666 held office as Treasurer General of the United Netherlands. Albert Burgh, Spinoza's correspondent, was the son of Conraad. He studied philosophy in Leyden from 1668 onwards, and travelled in Italy in 1673, and became a Catholic. His parents were much upset by this, and apparently persuaded Spinoza to write to him. But in vain. Albert Burgh joined the Franciscan Order, and died in a monastery in Rome.

GOTTFRIED WILHELM LEIBNIZ (1646–1716), as is evident from his first letter to Spinoza, turned to him in the first instance as an authority on optics. In 1671 Leibniz, who was then in the service of the Elector of Mainz, was sent to Paris to save Germany from the aggressive policy of Louis XIV by turning his thoughts to the conquest of Egypt. During the next few years he visited Paris several times on various missions, and there, in 1675, met Tschirnhaus, who sought Spinoza's

permission to show Leibniz his manuscript copy of Spinoza's Ethics. Spinoza's reply shows his suspicion of Leibniz. This was not unfounded. He had reason to suspect that Leibniz was working for the reunion of Protestants and Catholics, which could only result in their joint suppression of all freedom of thought and speech. But when, in the following year, Leibniz visited Spinoza in The Hague, his distrust melted away. Leibniz, according to his own account, visited Spinoza frequently, and "conversed with him often and at great length." He studied Spinoza's Ethics, and was much impressed by it; but such a Christian crusader could not be expected to have a lasting sympathy with Spinozism, and notwithstanding his great reputation as an idealist philosopher and as a mathematician (he was, with Newton, one of the discoverers of the differential and integral calculus), his character does not compare favourably with that of Spinoza.

EHRENFRIED WALTHER VON TSCHIRNHAUS (1651-1708) was a German Count who studied at the University of Leyden during the years 1668-75, but served part of the time as a volunteer with the Dutch army in the war with France. In 1674 he became acquainted with Schuller, of Amsterdam, who told him about Spinoza. Having studied Descartes, he became interested in Spinoza, started a correspondence with him, and visited him in the same year. In the summer of the following year he visited London, and met Boyle and Oldenburg. This led to the resumption of the correspondence between Oldenburg and Spinoza, which had been dropped apparently since 1665. In 1683 Tschirnhaus published his Medicina Mentis, the idea of which had been suggested to him by Spinoza's unfinished Treatise on the Improvement of the Understanding, from which he also derived some of his thoughts. His corre-

spondence with Spinoza gives us incidentally the first intimation of his discovery of the tangential measurement of curves. His practical interests embraced the manufacture of large burning-glasses, lenses, mirrors, etc.; and, together with J. L. Böttger, he invented porcelain, the oldest factory for which was started in Meissen, near Dresden, in 1710.

§ 6. DE VRIES, MEYER, BALLING, BOUWMEESTER, JELLES, SCHULLER

Of his other correspondents, some belonged to what may be termed Spinoza's intimate circle. They were De Vries, Meyer, Balling, Bouwmeester, Jelles, and Schuller. Most of them belonged to the Collegiant sect, who, in consequence of the persecuting zeal of the dominant Calvinist clergy, had to dispense with an official clergy of their own, and held private prayermeetings after the manner of the Quakers. Spinoza got to know them all while he was still in Amsterdam, where some of them, together with others unnamed, held a reading circle for the study of philosophy. This circle was conducted at first by Spinoza, but continued to meet even after his departure from Amsterdam, in 1660, and he sent them various philosophical essays for discussion and criticism, as is clear from the letters of De Vries and also from the concluding paragraph of the Short Treatise.*

SIMON JOOSTEN DE VRIES (? 1633-67) was an Amsterdam merchant. He studied under Spinoza, and his warm regard for his teacher shines through his letters. It is also borne out by practical proofs reported by the early biographers of Spinoza. Colerus relates that De Vries once offered Spinoza a present of two thousand florins to enable him to live more comfortably, but Spinoza declined it. On another occasion De Vries wanted to appoint Spinoza his heir, as he was a bachelor himself; but Spinoza dissuaded him from it, and made him leave all his property to his brother.

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^{*} See Spinoza's Short Treatise on God, Man, etc., translated by A. Wolf, pp. 149 f., or the Annotations to Letter XV.

De Vries, however, stipulated that his brother should in that case pay Spinoza an annuity of five hundred florins. When the time came Spinoza would not accept more than three hundred.

Lodewijk Meyer (1630-81) was born in Amsterdam, of Lutheran parents, but like Spinoza he moved in Collegiant circles, and was devoted to the cause of a simple universal religion. From an early age he showed strong literary interests. He wrote poems and plays, brought out an improved edition of a dictionary of foreign terms, helped in the compilation of a Dutch grammar, and did all he could to improve the knowledge of the Dutch language and literature. In 1654 Meyer went to the University of Leyden, where he studied philosophy and medicine, and in 1660 obtained both degrees, M.D. and Ph.D. Possibly he had once taken private lessons from Van den Enden when Spinoza was still with him as assistant master, and so the two young men became friendly. It is noteworthy that his Ph.D. thesis dealt with Matter and its States, Motion and Rest. In 1663, as is clear from Spinoza's letters, Meyer saw through the press Spinoza's geometric version of Descartes' Principles, and wrote a preface to it. In 1665 he was appointed Director of the Amsterdam Theatre, where he did much to improve the tone of the dramas played and the artistic quality of the performances. But he still found time for philosophy, for in the same year there appeared a book On the Right of Ecclesiastics, by a certain Lucius Antistius Constans, a pseudonym of Meyer's, according to Colerus and others. This book foreshadowed certain ideas of Spinoza's Tractatus Theologico-Politicus, and may have been the outcome of discussions between the two friends. It was at one time attributed to Spinoza. At all events, in 1666 Meyer published anonymously his Philosophy

the Interpreter of the Holy Scriptures, which contained Spinozistic allusions, was also at one time ascribed to Spinoza, and was actually published in one volume with the Tractatus Theologico-Politicus in 1674. The two friends certainly had many liberal thoughts in common. In 1669 Meyer ceased to be Director of the Amsterdam Theatre, though he was several times appointed by the magistrates as censor thereof. Shortly afterwards he founded a Society of Arts which had for its motto Nil volentibus arduum (Where there is a will there is a way). When Spinoza died in 1677, Meyer was almost certainly one of the friends who prepared for publication the Opera Posthuma, as is evidenced by the lavish use of capitals and accents, to which Meyer was much addicted. It appears that we are also indebted to Meyer for the best existing portrait of Spinoza, now in the library at Wolfenbüttel. It was bought from the executors of Professor Francius, Meyer's co-Director of the Amsterdam Theatre, and probably belonged to Meyer originally (see the frontispiece).

PIETER BALLING was a Mennonite, and an enemy of dogmatism. By calling he was an agent, the Amsterdam representative of various Spanish merchants. It is possible that Spinoza's knowledge of Spanish first brought them together. In 1662 Balling published his Light on the Candlestick, in which he attacked dogmatism and advocated a simple religion based on the inward light of the soul. In 1664 he translated into Dutch Spinoza's version of Descartes' Principles.

Johan Bouwmeester (1630–80) was born in Amsterdam, studied philosophy and medicine in Leyden, and qualified as a doctor in 1658. He was an intimate friend of L. Meyer, and in 1663 he wrote a laudatory poem prefixed to Spinoza's version of Descartes' *Principles*,

with Meyer in the Society Nil volentibus arduum, and was his co-Director of the Amsterdam Theatre in 1677. It is interesting to note that the Society Nil volentibus arduum once commissioned Bouwmeester to translate, from the Arabic, Ibn Tophail's Improvement of Human Reason, exhibited in the Life of Hai Ibn Yokdan. A Dutch translation actually appeared in 1672. The translator is indicated by the initials S. D. B., which some people regard as those of Spinoza (B. D. S.) slightly disguised.

JARIG JELLES (?-1683) was a spice merchant in Amsterdam, but in 1653 he entrusted his business to a manager, in order that he might be free to devote himself to the pursuit of knowledge, which he considered to be "better than choice gold," according to his biographer. He was one of the friends who persuaded Spinoza to publish his geometric version of Descartes' Principles, in 1663. He even defrayed the cost of its publication. It was probably at his instigation that Jan H. Glazemaker translated into Dutch the Tractatus Theologico-Politicus soon after its anonymous appearance in 1670. Spinoza's letter to Jelles shows that he only heard incidentally and vaguely about the impending appearance of the Dutch translation, and that he feared, rightly of course, that it might result in the prohibition of the Latin original as well as of the Dutch version. Jelles respected Spinoza's wish, and the Dutch translation of the Tractatus Theologico-Politicus was not published until 1693. According to a note written by Leibniz in 1676, Jelles was said to support Spinoza financially at the time. When Spinoza died, in 1677, Jelles was one of the small band of friends who took in hand the publication of the Posthumous Works both in Latin and in Dutch. The preface to the Posthumous Works is said to have been written in Dutch by Jelles, and translated into Latin

by L. Meyer. Glazemaker was responsible for the Dutch version of the Opera Posthuma (De Nagelate Schriften van B. D. S.). Jelles died in 1683, and the following year witnessed the publication of his Confession of Faith, with a biographical introduction which says that Jelles "strove unremittingly to penetrate more and more deeply into the knowledge and love of God, and he made such progress therein that there are few people who have worked their way up to such a high level of spiritual insight." This we may well believe. In his relations with other men he was so little estranged by differences of origin that in his long and important preface to the Posthumous Works of Spinoza he did not even mention the fact that Spinoza was a Jew by birth.

Georg Hermann Schuller (1651-79) was born in Wesel, studied medicine in the University of Leyden, and settled down in Amsterdam as a medical practitioner. It is not known how Spinoza got to know him. His letters betray a certain immaturity, but his enthusiasm appears to have impressed Spinoza, who consulted him medically on various occasions, and sent for him during his last illness. Schuller was the only person present at his bedside when the great philosopher passed away. For a long time it used to be supposed that L. Meyer had performed this last office, but Schuller's name appears among the signatories to the official inventory of Spinoza's property made immediately after the philosopher's death, and there is no evidence of any contact between Meyer and Spinoza during the last years of the latter's life. Immediately after the death of Spinoza, Schuller, who, as we have seen, knew both Leibniz and Tschirnhaus, wrote to Leibniz, who was then Librarian in Hanover, to offer him the manuscript of Spinoza's Ethics for one hundred and fifty florins, but withdrew the offer immediately afterwards. Schuller died at the early age of twenty-eight.

§ 7. BLYENBERGH, OSTENS, VELTHUYSEN, FABRITIUS, GRAEVIUS, STENO

WE may now deal briefly also with the remaining correspondents of Spinoza, namely, Blyenbergh, Ostens, Velthuysen, Fabritius, Graevius, and Steno.

WILLEM VAN BLYENBERGH (?-1696) was a grain broker of Dordrecht. He had a taste for theology, and regarded philosophy merely as the handmaid to theology. His attitude was sufficiently clear from the long title of a small book which he published in 1663, Theology and Religion defended against the views of Atheists, wherein it is shown by natural and clear arguments that God has implanted and revealed a Religion, that God wants to be worshipped in accordance with it, and that the Christian Religion not only agrees with the Religion revealed by God but also with the Reason which is implanted in us. Could anything be simpler! Unfortunately, Spinoza did not know of this book, or he might have spared himself much annoyance and trouble. But perhaps it is as well to know this correspondence between them, if only as evidence of Spinoza's extraordinary patience with such a bore. Poor Blyenbergh simply could not get away from his limited circle of ideas. He went round and round his barren patch like one possessed, and all Spinoza's endeavours to elucidate matters were wasted on him. In 1674 he published a Refutation of the blasphemous Book called Tractatus Theologico-Politicus, and, in 1682, a polemic against Spinoza's Ethics. Having thus distinguished himself as a defender of the faith, Blyenbergh was elected Burgomaster of Dordrecht in 1695.

JACOB OSTENS (1625–78) was a Collegiant, born probably at Utrecht. He settled as a surgeon in

Rotterdam, and seems to have become acquainted with Spinoza as an advocate of a simple, universal faith. Very little is known about him, and he is of interest to Spinoza students mainly as a link between Spinoza and Velthuysen.

Lambert van Velthuysen (1622-85) was born in Utrecht, and studied philosophy, theology, and medicine at the University of his native city, where he subsequently practised medicine. In comparison with the clergy of the dominant Church, he was so liberal as to come into conflict with them on various occasions. But Spinoza's views were beyond him, and he regarded the *Tractatus Theologico-Politicus* as atheistic and fatalistic. This annoyed Spinoza, but did not shake his faith in Velthuysen's sincerity and devotion to truth. After the death of Spinoza and the publication of his *Posthumous Works*, Velthuysen attacked his *Ethics* in a treatise *On Natural Religion and the Origin of Morality*.

Johann Ludwig Fabritius (1632–97) was born in Schaffhausen, and studied in Cologne and Utrecht. In 1660 he was appointed Professor of Philosophy and of Theology in the University of Heidelberg. He appears to have been in close touch with the Prince Palatine, to whose son he acted as tutor. In 1674 the French seized Heidelberg and closed the University. Fabritius fled, and wandered from place to place until he settled in Frankfurt, where he died in 1697. In connection with the invitation which he sent to Spinoza in 1673, it is interesting to note that the University of Heidelberg recently commissioned the publication of a sumptuous edition of the complete works of Spinoza, which was published in 1926.

Johan Georg Graevius (1632-?) was born in Naumburg. In 1661 he was appointed Professor of Rhetoric in the University of Utrecht. How he got to know Spinoza is not known, nor does he appear to have deserved Spinoza's confidence. It was through Graevius that Stoupe, a Swiss adventurer in the service of France against Holland, persuaded Spinoza in 1673 to visit the French camp at Utrecht, and soon afterwards slandered him in a book called *The Religion of the Dutch* (1673). As Graevius himself was violently opposed to Spinoza's *Tractatus Theologico-Politicus*, his share in Stoupe's design may not have been innocent.

Nicholas Steno (Nils Stensen in Danish) was born in Copenhagen in 1638. He took his medical degree at the University of Copenhagen, and then spent three years at the University of Leyden, carrying on researches in physiology. It must have been during this period that Steno became friendly with Spinoza, who lived in Rhynsburg, near Leyden, from 1660 till 1663. Steno then travelled for some time, and went to Paris in 1664. Here he came under the influence of Bossuet, and forsook Lutheranism for Roman Catholicism in 1667, while in Florence, where he had settled in 1666, and had been appointed physician to the Grand Duke. In 1668 Steno was elected Professor of Anatomy at Copenhagen, but, owing to friction because of his change of faith, he soon returned to Florence. In 1669 he published the Program of a treatise On Solids Naturally contained within Solids, dealing with gems, minerals, and fossils enclosed in rocks. Oldenburg published an English version of it in 1671. Steno also made important contributions to anatomy. Among his earliest discoveries in this field was that of the parotid gland and its ducts, one of which is still called "Steno's Duct" (Ductus Stenonianus).

In 1677 Pope Innocent XI made him Bishop of Titopolis and Vicar Apostolic for Northern Europe. For some time Steno lived in Hanover, then in Schwerin, where he died in 1687. He was buried at Florence, in the Basilica of S. Lorenzo.

§ 8. THE PHILOSOPHICAL IMPORTANCE OF SPINOZA'S CORRESPONDENCE

THE importance of Spinoza's correspondence for the adequate understanding of his philosophy is very great. Not only does it give us a more homely and less formidable account of various philosophical conceptions (such as Freedom, Duration and Time, Infinity, the Unity of Nature, etc.) than is to be found in his other writings, but some of his fundamental ideas are explained more adequately in his letters than elsewhere, at least in the sense that they are presented in a manner less liable to misinterpretation, if one studies them with an open mind and does not approach them with a mind already steeped in prejudice. It is not too much to say that some of the most mischievous misinterpretations of the philosophy of Spinoza are mainly due to an insufficient study of his letters, or at least to an insufficiently impartial study of them. In illustration of this contention I propose to deal briefly with three basic problems in the interpretation of Spinozism, namely, (a) the question of the relation of the Attributes to Substance; (b) the question of the significance of the frequent use of geometrical illustrations by Spinoza; and (c) the question of the nature of the Attributes.

(a) The prevalence of the so-called critical philosophy of Kant during the nineteenth century, and its tendency towards the epistemological interpretation of all philosophical problems, and even of systems of philosophy, led to what may be described as a Kantian interpretation of the relation of the Attributes to Substance in the system of Spinoza. In other words, the Attributes were alleged to have been regarded by Spinoza not as real, objective characters or constituents of Substance,

but merely as our subjective ways of conceiving Substance—Substance being the thing-in-itself (noumenon) of which Attributes are but the appearances (phenomena). This sort of interpretation was put forward by J. E. Erdmann (Grundriss der Geschichte der Philosophie, Band II) and others, who justified themselves by reference to Ethics I, Definition iv, which states: "By attribute I mean that which the intellect apprehends of substance as constituting its essence." Spinoza's Letters (II, IV, IX), however, make it quite clear that this quasi-Kantian interpretation is wrong, and that Spinoza regarded Attributes as having the same objective reality as Substance itself. Substance (or God, or Nature) is, for Spinoza, the unified totality of Attributes. The only difference between Substance and its Attributes is that each Attribute can be thought of separately, whereas in reality all the Attributes are inseparably together in Substance. Moreover, according to Spinoza, the intellect gives us a knowledge of the real and not of mere appearances. It is, consequently, illegitimate to read into Spinoza the distinction between what Substance is in reality and what it is to the intellect, except for the difference between the number of the Attributes conceived:

(b) The significance almost universally attached to Spinoza's frequent use of geometrical or other mathematical illustrations is based on the assumption that Spinoza agreed with the common conception of the nature of geometrical figures and their properties. The common conception dates at least from the time of Plato, if it is not even older. According to this conception, geometrical figures as studied in geometry are the nearest perceptible or imaginative approach to Ideas as Plato conceived them—eternal, rational entities beyond the vicissitudes of time and change. The most important feature of the common conception, so far as we are

at present concerned, is the way in which the properties of a geometrical figure are usually conceived to be interrelated. They are, namely, held to be related to one another in a purely rational or logical manner, to which time is simply irrelevant; they are not, it is maintained, related causally to one another, because the causal relation involves time-sequence and change, which do not concern geometrical figures. Such, briefly, is the usual idea about geometrical figures and their properties; and the idea is so widespread that it does not appear to have occurred to anybody even to put the question whether Spinoza shared this view. It has simply been assumed all along that he did entertain this view, and the fact that he sometimes employed the expression causa seu ratio (cause or reason) has given rise to the view that for Spinoza there was only one kind of relationship in the universe, namely, the purely rational or logico-mathematical relationship, for, so it was alleged, he reduced causes to reasons. And so it has come about that the most usual description of Spinoza's philosophy is that it is a "mathematical pantheism." The phrase is due to W. Windelband (Präludien zur Philosophie), but the interpretation which it expresses is much older and is very widely accepted.

Now I do not propose to raise here the question whether the current conception of geometrical figures and their properties is correct or not. This does not directly concern us here. What does concern us very much is whether Spinoza held such a view, and the answer to this is quite definitely No. Letter LX makes it very clear that Spinoza regarded geometrical figures as effects produced by certain movements. Thus, for example, he defines a circle as "a figure described by a line one point of which is fixed while the other is revolving." Moreover, he explicitly adds that he prefers this definition to other possible definitions of

the same figure just because it expresses the efficient cause of the figure defined. Similarly, we may rightly suppose, he regarded a rectilinear triangle as a figure produced when three straight lines are moved about and joined in such a way as to enclose a space. And similarly with other figures. Really, therefore, Spinoza's frequent use of geometrical illustrations is so far from confirming the usual conception of Spinoza's world as a purely mathematical, or logico-mathematical, system, that prima facie it rather suggests a causal or dynamic system.

(c) Spinoza's conception of the Attributes (or their organic totality, Substance) was essentially dynamic, not static like the Eleatic and Platonic views of the nature of ultimate reality. The unprejudiced student of Spinoza's writings cannot possibly overlook the dynamic terminology which Spinoza employs throughout his writings. Activity is for him an essential character of reality, if not identical with it. This is clear from such statements as the following: "The more essence a thing has, so much more has it also of activity" (Short Treatise, p. 146 of my translation); "the more perfect a thing is, the more reality it possesses, and consequently acts more" (Ethics, V, xl). And he does not say this of finite objects or modes only. He maintains this view with regard also to Attributes and Substance. In the Short Treatise, pp. 34 and 120, and again in his Ethics, II, i, vii and xxi, he describes the Attributes Thought and Extension as powers. And in Ethics I, xvii, II, iii, etc., Substance, or God Himself, is identified with power, and we are told that it is as impossible for us to think that God does not act as that He does not exist.

The accuracy of this dynamic interpretation of Spinoza finds interesting confirmation in his correspondence (Letters LXXXI and LXXXIII). In answer

to Tschirnhaus's inquiry about the Cartesian conception of matter as mere inert extension, Spinoza says that from matter or extension so conceived, natural phenomena could not possibly be derived. And when Tschirnhaus reminded him that Descartes had supposed that God had added the necessary motion and rest to set things going, he only betrayed his own confusion of a rational philosophy with a miracle-dealing theology. The use of the same term Extension by Spinoza and by Descartes has unfortunately obscured for most people the enormous difference between the Cartesian and the Spinozistic conception of the ultimate nature of matter. For Spinoza Extension or Matter is essentially Physical Energy. It expresses itself in the infinite mode of motion and rest, which consequently need not be introduced miraculously from the outside, as was the case in Descartes' scheme of things. Extension, says Spinoza very explicitly (Short Treatise, p. 120), is "the power to produce" motion and rest, or kinetic and potential energy, as we may say.

The history of science since the seventeenth century has fully justified Spinoza's conception of the dynamic or kinetic character of matter, as against the view of Descartes and all his contemporaries as well as many distinguished successors. Descartes, for example, could only account for the movements of the planets by invoking, as is usual with him, a Deus ex machina and inventing the machinery of aether vortices to carry the planets. Even Newton clung to the aether, and for much the same reason, namely, because matter was conceived as inert. But after Newton's formulation of the law of universal gravitation a marked change came about. In spite of Newton's opposition to it, the view which gradually prevailed was that gravitation is inherent in matter as such; and the kinetic conception of matter has grown so much in favour that "matter"

has almost been displaced by energy or "fields of force." *

Enough, it is hoped, has been said to show the need of an impartial revision of the common interpretations of Spinozism in the light of a thorough study of all the writings of Spinoza, including especially his correspondence.

^{*} A fuller discussion of the problem will be found in "Spinoza's Conception of the Attributes of Substance," by A. Wolf (Proceedings of the Aristotelian Society, 1927).

§ 9. BIBLIOGRAPHICAL

THE Correspondence of Spinoza was first published in the year of his death, 1677, in a volume entitled Opera Posthuma, which also contained the Ethica, the Tractatus Politicus, the Tractatus de Intellectus Emendatione, and the Compendium Grammatices Linguae Hebraeae. In this first edition the correspondence consisted of seventy-four letters, while another letter was given in the place of a preface to the Political Treatise. So of all his actual correspondence only seventy-five letters were published altogether by the friends who edited the Posthumous Works. It is known that the editors and the publishers had more letters than were printed, but they were mostly destroyed for various reasons.

The principal reason was the fear lest the editors got themselves or others into trouble with the Dutch authorities. Hence, also, the omission of all the names of Spinoza's Dutch correspondents from such letters as were published. Considering the persecuting zeal of the Calvinist preachers, and their increased influence with the civic authorities after the fall of the De Witt regime, it was no doubt dangerous for people to have their names associated in any friendly way with Spinoza or with the De Witts. The oldest biographer of Spinoza laments that he had to observe as much secrecy, when writing his account of the life of the philosopher, as if he had been committing a crime. The absence of any letters to or from Jan de Witt may be due to their destruction caused by such fear; and the same may be said of many other letters, such as the correspondence which must have passed between Spinoza and various people in Holland before he visited the French camp

in Utrecht, in 1673, on the invitation of Prince Condé and at the instigation of Colonel Stoupe.

Another reason is suggested by the separate title-page of the Correspondence in the Posthumous Works. This title-page lays stress on the fact that the letters contribute not a little to the elucidation of Spinoza's other works. The editors of the Opera Posthuma, as appears from the preface thereto, were not deeply interested in the personal history of Spinoza, but only in his teachings. Letters which were mainly of personal interest, we may accordingly assume, were regarded as "of no importance"—to use the phrase actually used by the son of the publisher of the Opera Posthuma (Rieuwertsz) with reference to some Spinoza letters once in his or in his father's possession.* It is known that in some cases the editors of the Opera Posthuma deliberately omitted from the letters which they published passages of purely personal interest, such as the concluding paragraphs of Letter VI. It was the same lack of interest in the personal history and development of Spinoza that was responsible for their failure to publish the Apology or Defence which he had written at the time of his excommunication, in 1656, and his Short Treatise on God, Man, and his Well-Being, which he had written between 1656 and 1660. From their point of view, these works had been superseded by the Tractatus Theologico-Politicus and the Ethica respectively, and had no further interest.

However, during the past hundred years or so another ten letters have been recovered and a fragment of an eleventh letter. So that altogether, including the fragment, the extant correspondence of Spinoza consists at present of eighty-six letters. Of this total, forty-nine were written by Spinoza and thirty-seven by his corre-

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^{*} See Dr. Halmann's report of a conversation with Rieuwertsz, in 1704, in J. Freudenthal's Die Lebensgeschichte Spinoza's (1899).

spondents. In recent years diligent search has been made, in many European libraries and elsewhere, in the hope of discovering more of Spinoza's correspondence, but in vain so far. Still, all hope has not been abandoned, especially in view of the fact that as recently as 1900 the late Mr. Meno Haas, at that time a partner in the London firm of booksellers, David Nutt & Co., informed Mr. Nijhoff, the Hague publisher, that he had seen some unpublished Spinoza letters in a private collection in England.

The eleven letters not included in the *Posthumous Works*, but published since then, are those numbered XV, XXVIII, XXIX, XXX, XLVIIIA, XLIX, LXVIIA, LXIX, LXXII, and LXXIX.

Of Spinoza's own letters twelve are still extant either in autograph or in facsimile. They are the letters numbered VI, IX, XV, XXIII, XXVIII, XXVIII, XXVIII, XXXIII, XLIII, XLVI, XLIX, LXIX, and LXXII. They have been published in facsimile, with transliterations, translations, and notes, by the late Dr. Willem Meyer.*

A few words of explanation are necessary regarding the numerical order of the letters. The editors of the Opera Posthuma had arranged the correspondence in an order which attempted to combine the chronological arrangement with that according to correspondents. Thus, for example, all the letters to and from Oldenburg were grouped together, and arranged chronologically within the group; similarly with the letters which passed between Spinoza and other correspondents. On this plan the letters were numbered from I to LXXIV in the first edition. The discovery of hitherto unpublished letters inevitably upset this numerical order to some extent, and when the memorial edition of Spinoza's

^{*} Nachbildung der im Jahre 1902 noch erhaltenen eigenhändigen Briefe des Benedictus de Spinoza... Herausgegeben von W. Meyer, im Haag, 1903.

works was published, in 1882, the editors, Van Vloten and Land, decided to rearrange the letters in a strictly chronological sequence without regard to the correspondents. At that time only nine additional letters had been discovered. Adding the letter which had been used as preface to the Political Treatise, there was a total of eighty-four letters, which were numbered accordingly. The new numbers were, of course, in most cases different from the old ones. Since 1882 the new numbers have come into general use among Spinoza scholars in place of the old ones; and in order to avoid the need of upsetting the new numerical order, the two letters discovered since 1882 have been put in their proper place and numbered XLVIIIA and LXVIIA respectively. To facilitate cross-reference between the older and the present numerical designations of the various letters, two comparative tables are given to enable the reader to identify the letters according to either system of enumeration. And, of course, it is open to anybody to read the letters in any other order, such as the order according to the nature of the problems discussed, etc.

Something must be said, next, about the different versions of Spinoza's correspondence. In the Opera Posthuma the correspondence, like everything else contained in that edition, appeared in Latin. Some of the letters, however, had originally been written in Dutch, and had been translated into Latin either by Spinoza himself, or by the editors, or by other friends of Spinoza. In every such case the letter was described as a translation (Versio). On the other hand, there appeared in the same year, 1677, a Dutch version of the Opera Posthuma (except the Hebrew Grammar), namely, De Nagelate Schriften. In this edition, of course, all the letters are in Dutch. Those originally written in Latin, or which were only available in Latin versions, had to be translated into Dutch for this edition, while letters originally

written in Dutch and then still extant in Dutch were in some cases, at all events, printed from the Dutch originals, which occasionally contained passages omitted from the Latin versions printed in the Opera Posthuma. In some cases there are also extant two Latin versions of the same letter, usually the original letter and either an amended copy, or the first draft of it, retained by Spinoza. Volume IV of the Heidelberg edition of Spinoza Opera contains all the extant versions of Spinoza's correspondence, as well as detailed information relating to the history of each letter. Some information of this kind will be found in the Annotations.

The present translation is based on the Heidelberg edition, and the version followed is the original one, if still extant, whether in Latin or in Dutch, while deviations of any importance, found in other extant versions, are indicated in the Annotations. Letters XVIII, XIX, XX, XXII, XXIII, XXIV, XXVII, XXVIII, XXIX, XL, XLI, XLIV, L, LII, and LIII have been translated from the Dutch; all the others from the Latin.

With regard to the special literature on the subject there is little to be said, as Spinoza's correspondence has not hitherto received very much attention. The best French version is contained in Oeuvres de Spinoza traduites par Emile Saisset (3 vols., Paris, Charpentier, 1872). The best German translation is Spinozas Briefwechsel übertragen von Carl Gebhardt (Leipzig: Meiner, 1914). Selections from Spinoza's correspondence were first translated (or rather very freely rendered) into English by R. Willis in his Benedict de Spinoza: His Life, Correspondence and Ethics (London, Trübner, 1870), and again by R. H. M. Elwes in Spinoza's Chief Works (2 vols., London, Bohn, 1883-4). The present translation is the only complete English translation. It is more complete than any other translation in any language, and, it is believed, also the most accurate. Of books

about Spinoza's correspondence the only one worth mention is Spinozas Entwicklungsgang, besonders nach seinen Briefen geschildert, von A. Baltzer (Kiel: Lipsius Tischer, 1888). But, of course, all modern books on the life and philosophy of Spinoza contain some allusions to his correspondence.



THE LETTERS OF CERTAIN LEARNED MEN

TO B. D. S.

AND THE AUTHOR'S REPLIES

CONTRIBUTING NOT A LITTLE TO

THE ELUCIDATION OF HIS OTHER WORKS.



TO THE VERY ILLUSTRIOUS MR. B. D. S.

VERY ILLUSTRIOUS SIR, HONOURED FRIEND,

So reluctantly did I tear myself away from your side recently when I was with you in your retreat at Rhynsburg, that no sooner am I back in England than I strive, as far as possible, to rejoin you at least by an exchange of letters. Solid learning combined with humanity and refinement of character (with all of which Nature and Industry have most amply endowed you) provide such charms of their own that they win the love of all men who are open-minded and liberally educated. Come, then, most excellent Sir, and let us join our right hands in unfeigned friendship, and let us diligently cultivate it with every kind of devotion and service. If anything from my slender store can be of service to you, consider it yours. As to the gifts of mind which you possess, allow me to claim a share of them, since this can be done without detriment to you.

At Rhynsburg we conversed about God, about infinite Extension and Thought, about the difference and the agreement of these attributes, about the nature of the union of the human soul with the body; also about the Principles of the Cartesian and the Baconian Philosophy. But as we then discoursed about problems of such moment as through a lattice and only in a hurry, and they continue to crucify my mind, let me venture to plead with you by right of the friendship begun between us, and to ask you very cordially to set forth your ideas on the above-mentioned subjects somewhat more fully, and especially not to mind instructing me in the following two points, namely, first, wherein you place the true distinction between Extension and

Thought, and secondly, what defects you observe in the Philosophy of Descartes and of Bacon, and how you consider that these defects may be removed from their midst, and sounder views be substituted for them. The more freely you write to me on these and similar subjects, the more closely will you bind me to you, and you will strongly put me under an obligation to render equivalent services, if only I can.

Here there are already in the press Certain Physiological Essays, written by a certain English Noble, a man of excellent erudition. They treat of the nature of air and of its Elastic property, established by forty-three experiments; also of Fluidity and Firmness, and the like. As soon as they are printed I will see to it that they are delivered to you by a friend who is probably crossing the sea shortly.

Meanwhile farewell, and keep in memory your friend who is

Yours in all love and devotion,
HENRY OLDENBURG

London, $\frac{16}{26}$ August 1661.

LETTER II

B. D. S.

To the Very Noble and Learned Mr. HENRY OLDENBURG

Reply to the Preceding.

VERY ILLUSTRIOUS SIR,

How pleasant your friendship is to me you will be able to judge for yourself if only you can prevail upon your modesty to allow you to consider the excellent qualities which you have in abundance, and although, when I consider them, I seem to myself to be not a little bold because assuredly I dare to enter

into friendship with you, especially when I consider that all the possessions of friends, particularly those that are spiritual, ought to be shared, yet this step will have to be attributed to your humanity and benevolence rather than to me. From the height of this humanity you have been willing to lower yourself and to enrich me with the abundance of your benevolence to such an extent that I do not fear to enter into that close friendship which you steadfastly offer me, and which you deign to ask from me in return, and I will make it my earnest care to cultivate it diligently. With regard to my mental endowments, if I possess any, I should most willingly allow you to make a claim upon them, even if I knew it would be to my great detriment. But lest I seem in this way to wish to decline what you ask of me by right of our friendship, I will try to set forth what I think about the subjects of which we spoke, although I do not think that this will be a means of binding you more closely to me without the intervention of your kindness.

I will begin, then, to speak briefly of God, whom I define as a Being consisting of infinite attributes of which each is infinite, or in the highest degree perfect of its kind. Here it should be noted that I understand by attribute all that which is conceived through itself, and in itself; so that its conception does not involve the conception of some other thing. For example, Extension is conceived through itself, and in itself; but not so motion. For it is conceived as in something else, and its conception involves Extension. That this is, indeed, the true definition of God is clear from the fact that we understand by God a Being supremely perfect, and absolutely infinite. That such a Being exists, it is easy to prove from this definition; but, since this is not the place for it, I will omit the proof.

your first enquiry, most illustrious Sir, are the following. First, that in nature there cannot exist two substances, unless they differ in their whole essence. Secondly, that a substance cannot be produced; but that existence pertains to the essence thereof. Thirdly, that every substance must be infinite or supremely perfect of its kind. When these points have been proved you will easily be able, most illustrious Sir, to see my trend of thought, if only you will also pay attention to my definition of God, so that there is no need to speak more clearly on these matters. But in order to prove these points clearly and briefly I could think of nothing better than to submit for your consideration such proofs after the manner of Geometry, and so I send them* here separately, and await your verdict on them.

You ask me, secondly, what errors I observe in the Philosophy of Descartes and of Bacon. In this matter, although it is not my custom to expose the errors of others, I am nevertheless willing to gratify you. The first, then, and greatest error, is that they have strayed so far from the knowledge of the First Cause and of the origin of all things. The second is that they did not know the true nature of the human Mind. The third is that they never arrived at the true cause of Error. The extreme necessity of a true knowledge of these three things is only ignored by those who are utterly destitute of learning and training. That they have strayed from the knowledge of the First Cause and of the human Mind is easily gathered from the truth of the three propositions mentioned above: wherefore I turn to the demonstration of the third error alone. I will say little of Bacon who speaks quite confusedly on this subject, and proves almost nothing, but only makes assertions. For, first, he supposes that, besides

^{*} See Ethics, Part I, from the beginning up to Proposition IV.

the deception of the senses, the human intellect is fallible by its very nature, and imagines everything after the analogy of its own nature, and not after the analogy of the universe, so that it is like an uneven mirror [turned] to the rays of things, which mingles its own nature with the nature of the things, etc. Secondly, that the human intellect on account of its peculiar nature is prone to make abstractions, and imagines things to be stable which are in flux, etc. Thirdly, that the human understanding is unquiet, it cannot stop or rest. And such other causes as he assigns can easily all be reduced to the single one of Descartes, namely, because the human will is free and wider in scope than the intellect, or, as Verulam* himself more confusedly says (Aphorism 49), because the intellect is no dry light, but receives an infusion from the will. (Here it should be noted that Verulam often uses Intellect for Mind, in which respect he differs from Descartes.) Therefore, taking little notice of the other reasons which are of no moment, I will show that this reason is false, a fact which they, too, would easily have seen if they had only paid attention to this, namely, that will differs from this or that volition in the same way as whiteness differs from this or that white thing, or humanity from this or that man; so that it is just as impossible to conceive that will is the cause of this or that volition as that humanity is the cause of Peter and Paul. Since, therefore, will is nothing but a thing of reason and cannot be said to be in any way the cause of this or that volition, and particular volitions, since they need a cause in order to exist, cannot be said to be free, but are necessarily what they are determined to be by their causes, and, lastly, since, according to Descartes, these very errors are particular volitions, it necessarily follows that errors, that is, particular volitions,

^{*} See Novum Organum, Book I, Aphorisms 48-51.

are not free, but are determined by external causes, and in no way by will. This is what I promised to prove. Etc.

[RHYNSBURG, September 1661.]

LETTER III

HENRY OLDENBURG

TO THE VERY ILLUSTRIOUS MR. B. D. S.

Reply to the Preceding.

Excellent Sir, and dearest Friend,

Your very learned letter has been delivered to me, and read with great pleasure. I warmly approve your geometric method of proof: but, at the same time, I blame my own dullness in that I do not so promptly grasp what you so accurately teach. Permit me, I pray, to present the evidence of this stupidity of mine, as I put forward the following questions, and seek from you their solutions.

The first is, do you understand clearly and without doubt that from the mere definition which you give of God, it can be demonstrated that such a Being exists? I, indeed, when I consider that definitions contain nothing but conceptions of our Mind, moreover that our Mind conceives many things which do not exist, and is very fruitful in the multiplication and augmentation of things once conceived, I do not see yet how from the conception that I have of God I can infer the existence of God. To be sure, from the mental store of all the perfections which I observe in men, animals, vegetables, minerals, etc., I can conceive and fashion some single substance which may fully possess all these excellences, nay more, my Mind is capable of multiplying and augmenting them to infinity, and so of feigning by itself some most perfect and most excellent Being; yet the existence of such a Being cannot by any means be inferred from that.

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The second question is, have you no doubt that Body is not limited by Thought, nor Thought by Body? since it is still an open question what thought is, whether it is a corporeal motion, or a certain spiritual act entirely different from the corporeal.

The third question is, whether you hold those axioms, which you communicated to me, as indemonstrable Principles, recognised by the light of Nature, and standing in no need of proof? It may be that the first Axiom is of such a kind; but I do not see how the remaining three can be included in the number of such principles. For the second axiom supposes that there exists nothing in Nature besides substances and accidents, whereas many assert that time and place have the character of neither. Your third Axiom, namely, that Things which have different attributes have nothing in common, is so far from being clearly conceived by me that the whole universe seems rather to prove the contrary. For all the things known to us both differ in some respects, and also agree in certain respects. Lastly, the fourth axiom, namely, Things which have nothing in common cannot be one the cause of the other is not so obvious to my dull intellect as to need no further light for its illumination. For God has nothing essentially in common with created things, yet is He held by almost all of us to be their cause.

Since, then, these axioms do not seem to me to be placed beyond all risk of doubt, you will easily conjecture that your Propositions which are based on them cannot but be shaky. And the more I consider them, the more I am overwhelmed with doubts about them. For against the first proposition I submit that two men are two substances, and have the same attribute, since both are endowed with reason; whence I conclude that there do exist two substances with the same attribute. With regard to the second, I consider

that, since nothing can be the cause of itself, it can hardly be grasped by us how it can be true that a substance cannot be produced, not even by any other substance.

For this Proposition declares that all substances are causes of themselves, and that they are all and sundry independent of each other, and thus makes them so many Gods, and in this wise denies the First Cause of all things. This conclusion I willingly confess that I cannot grasp, unless you do me the favour of disclosing to me somewhat more clearly and more fully your opinion on this high subject, and of teaching me the origin and production of Substances, the dependence of things on one another, and their mutual subordination. I adjure you by that friendship into which we have entered, to deal with me freely and faithfully in this matter, and I beg you most earnestly to be fully persuaded that all these matters which you deign to impart to me will remain inviolate and safe, and that I will not do anything to let them become public so as to cause you harm or injury.

In our Philosophical Society we indulge, as far as our powers allow, in diligently making experiments and observations, and we spend much time in preparing a History of the Mechanical Arts, feeling certain that the forms and qualities of things can best be explained by the principles of Mechanics, and that all the effects of Nature are produced by motion, figure, texture, and the varying combinations of these, and that there is no need to have recourse to inexplicable forms and occult qualities, as to a refuge for ignorance.

The book, which I promised, I will send to you as soon as your Dutch Ambassadors, who are acting here, send some messenger to the Hague (as they are often wont to do), or as soon as some other friend, to whom I can safely entrust it, goes to you.

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I beg your forgiveness for my prolixity and frankness, and especially I pray you that what I have freely said without any disguise, or courtly elegance, in answer to your letter, you should take in good part as friends are wont to do, and believe me to be without pretence and artfulness

Your very devoted HENRY OLDENBURG.

LONDON, 27 Sept. 1661.

LETTER IV B. D. S.

To the Very Noble and Learned Mr. HENRY OLDENBURG

Reply to the Preceding.

VERY ILLUSTRIOUS SIR,

While preparing to go to Amsterdam, there to spend a week or two, I received your extremely welcome letter and saw your objections to the three Propositions which I sent; I will try to satisfy you on these points only, omitting the rest for want of time.

And so I say, in reply to the first objection, that the existence of the thing defined does not follow from the definition of every kind of thing: but follows only (as I showed in the Scholium which I appended to the three Propositions) from the definition or idea of some attribute, that is, (as I explained clearly with regard to the definition of God) of a thing which is conceived through itself and in itself. Unless I am mistaken I have in the said Scholium set out the ground of this difference clearly enough, especially for a Philosopher. For he is supposed to know the difference which exists between a fiction and a clear and distinct conception, and also the truth of this Axiom, namely, that every definition, or clear and distinct idea, is true. Having

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noted these points, I do not see what more is required for the solution of the first question.

Therefore I proceed to the solution of the second. Here you seem to concede that if Thought does not pertain to the nature of Extension, then Extension cannot be limited by Thought; to be sure you are only in doubt about the example. But please note, if anyone says that Extension is not limited by Extension but by Thought, is not that the same as saying that Extension is not infinite absolutely but only in so far as it is Extension? That is, he does not allow that Extension is infinite absolutely, but only in so far as it is extension, that is in its own kind? But you say, Thought is, perhaps, a corporeal act. So be it, although I make no such concession; but this at least you will not deny, that Extension, in so far as it is Extension, is not Thought; which is sufficient to explain my definition and to prove my third Proposition.

You proceed in the third place to object to my assertions that the Axioms are not to be reckoned among common Notions. Over this, however, I will not dispute. But you doubt their truth, or rather you seem to want to show that their contrary is more like the truth. But, pray, observe the definition I gave of Substance and of Accident, from which all these things are inferred. For I understand by substance that which is conceived through itself and in itself, that is, something the conception of which does not involve the conception of some other thing, and by modification, or by Accident, that which is in something else, and is conceived through that in which it is. It clearly follows, therefore, first that substance is by nature prior to its Accidents. For without substance these can neither exist nor be conceived. It follows, secondly, that besides Substances and Accidents nothing exists in reality, or outside the intellect. For whatever exists,

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is conceived either through itself or through some other thing, and the conception of it either does or does not involve the conception of some other thing. It follows, thirdly, that things which have different attributes have nothing in common between them. For by attribute I described that the conception of which does not involve the conception of some other thing. Fourthly and lastly, it follows that things which have nothing in common between them cannot be one the cause of the other. For when the effect has nothing in common with its cause, then whatsoever it might have, it would have from nothing. As to your contention that God has nothing essentially in common with created things, etc., I stated the exact opposite in my definition. For I said that God is a Being consisting of infinite attributes, of which each is infinite, or supremely perfect of its kind. With regard to your argument against the first Proposition, I pray you, my Friend, to consider that men are not created but only begotten, and that their bodies existed already before, although in another form. This, however, is inferable, as I freely confess, namely, that if one part of matter were destroyed, then all Extension would vanish at the same time. The second Proposition, however, does not make many Gods, but one only, that is, one God consisting of infinite attributes, etc.

[RHYNSBURG, October 1661.]

LETTER V

HENRY OLDENBURG

TO THE VERY ILLUSTRIOUS MR. B. D. S.

Reply to the Preceding.

Much Honoured Friend,

Receive the little book which I had promised you, and send me in return your opinion of it, and

especially of the experiments it gives on Nitre, and Fluidity, and Firmness. My best thanks for your second learned letter which I received yesterday. I am extremely sorry, however, that your journey to Amsterdam prevented you from answering all my doubts. I beg you to send me what was then omitted as soon as you have the leisure. You have, indeed, afforded me much light in this last letter; but not so much as to remove the darkness completely; which I believe, will happily come to pass when you shall have instructed me distinctly and clearly about the true first origin of things. For as long as it is not clear to me through what cause and in what manner things began to be and by what bond they depend on the First Cause, if there be such a thing, so long all that I hear or read seems to me disconnected. Therefore, very learned Sir, I earnestly beg you to hold forth the torch before me in this matter, and not to doubt of my loyalty and gratitude, who am

Your very devoted HENRY OLDENBURG.

London, $\frac{11}{21}$ Oct. 1661.

LETTER VI

B. D. S.

To the Very Noble and Learned Mr. HENRY OLDENBURG.

Reply to the Preceding.

Containing Comments on the Book of the Most Noble Robert Boyle, on Nitre, Fluidity, and Firmness.

VERY ILLUSTRIOUS SIR,

I have received the book of the very talented Boyle and I have read it as much as my leisure allowed. I thank you very much for this gift. I see that, already when you first promised me the book, I made no vain

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conjecture in thinking that you would not be interested in anything unless it was of great moment. Meanwhile, most learned Sir, you wish me to send you my humble opinion on what he has written: this I will do according to my modest capacity, noting, namely, those points which seem to be obscure or insufficiently demonstrated; but owing to other occupations I have not yet been able to go through, much less to examine, it all. Receive therefore in what follows what I find to comment about Nitre, etc.

ON NITRE.

First he infers from this experiment on the redintegration of Nitre that Nitre is something heterogeneous, consisting of fixed and of volatile parts. Its nature, however, (at least as regards its manifestations) certainly differs from the nature of the parts of which it is composed, although it arises solely from the mere mixture of these parts. I remark that, in order that this conclusion may be pronounced valid, yet another experiment is required by which it would be shown that the Spirit of Nitre is not really Nitre, and without salt of lye cannot be reduced to a state of coagulation, or be crystallized; or at least it was necessary to inquire whether the quantity of fixed salt which remains in the crucible is always found to be the same from the same quantity of Nitre, and whether it is proportionate when there is more Nitre. As to what the very illustrious author says (section 9) he has discovered with the aid of the scales, and also that the Phenomena of the Spirit of Nitre are so different from, indeed some of them contrary to, the Phenomena of Nitre itself, in my opinion at least they do nothing to confirm his conclusion. In order to make this clear I will explain in a few words what occurs to me as the simplest explanation of this redintegration of Nitre; and at the same

time I will add two or three very easy experiments by which this explanation may to some extent be confirmed.

In order, then, to explain this phenomenon in the simplest possible way, I will posit no other distinction between Spirit of Nitre and Nitre itself than that which is sufficiently manifest, namely that the particles of the latter are in a state of rest, while those of the former agitate each other with no little vehemence. With regard to the fixed salt I shall suppose that this has nothing to do with the constitution of the essence of Nitre; but I shall consider it as the dregs of Nitre, from which even the Spirit of Nitre (as I find) is not free; although reduced to fine powder they float about in it in large quantities. This salt or these dregs have pores or spaces hollowed out commensurably with the size of the particles of Nitre. But when by the action of fire the Nitric particles were driven out of the pores, some of these became narrower, and others were consequently forced to become dilated, and the substance itself, or the walls of these pores, were made rigid and at the same time very brittle; therefore when the Spirit of Nitre was allowed to trickle thereon, certain of the particles of the Spirit began to penetrate impetuously into these narrower pores, and since their thickness is not uniform (as has been well shown by Descartes) they first bent the rigid walls like an arc and then broke them; and when they broke them they compelled the fragments to spring back, and, since they retained their previous motion, they remained as incapable as they were before of being coagulated or crystallized; parts, indeed, of the Spirit which penetrated into the larger pores, since they did not touch the walls, were necessarily surrounded by some very fine matter, and were expelled by it again, in the same way that bits of wood are expelled by a flame or by heat, and were given off in smoke; but if they were sufficiently numerous,

or had united with the fragments of the walls and with the particles which had entered into the narrower passages, they would form drops which fly upwards. If, however, the fixed salt is loosened by means of water* or air, and is rendered more inert, then it becomes sufficiently capable of stopping the rush of the particles of Nitre, and forcing them to lose the motion which they had, and again to come to rest, like a cannon-ball when it strikes the sand or mud. It is just this consistency of the particles of Spirit of Nitre that constitutes the redintegration of Nitre, to effect which fixed salt (as appears from this explanation) is employed as a kind of instrument. So much about the redintegration.

Let us now see, if you please, first why Spirit of Nitre and Nitre itself are so different from each other in taste; secondly why Nitre is inflammable, whereas Spirit of Nitre is not at all so.

In order that we may understand the first question, we must notice that bodies which are in motion never come into contact with other bodies along their largest surfaces; but bodies which are at rest touch other bodies with their largest surfaces: and so if particles of Nitre are put on the tongue when they are at rest, they will lie upon it on their largest surfaces, and in this way they block its pores, which causes cold; add to this the fact that Nitre cannot be dissolved by the saliva into sufficiently small particles. But if these particles are placed on the tongue when they are in excited motion, they will touch it with their sharppointed surfaces and will penetrate into its pores, and the more excited their motion, the more sharply will they prick the tongue; in the same way a needle will give rise to different sensations according as it touches the tongue with its point or lies flat upon it.

^{*} If you ask why from the infiltration of Spirit of Nitre into the dissolved fixed salt there arises an effervescence, then read the note on § 24.

The reason, however, why Nitre is inflammable whereas its Spirit is not, is that when the particles of Nitre are in a state of rest, it is more difficult for them to be carried upwards by the fire than when they have their own motion in all directions, and for this reason so long as they are at rest they will resist the fire, until the fire separates them from each other, and encompasses them on all sides; but when the fire does encompass them, it carries them hither and thither along with it until they acquire their own motion and go up in smoke. But the particles of the Spirit of Nitre, since they are already in motion, and are separate from one another, are dilated in every direction within a larger compass by a little heat from a fire, and in this way some go off in smoke, others make their way into the matter which supplies the fire, before they have been entirely encompassed by the flame; and so they extinguish rather than feed the fire.

I will proceed now to the experiments which seem to confirm this explanation. The first is that I discovered that the particles of Nitre, which go off in smoke amid a crackling noise, are pure Nitre; for once or twice when I liquefied Nitre until the crucible was sufficiently hot, and then set fire to it with a live coal, I collected the smoke in a cold glass flask until it was moist with the smoke, and afterwards I made the flask still more moist by breathing on it, and then * I put it out into the cold air to dry. When I had done this there appeared here and there in the flask small icicles of Nitre, and in order to remove the suspicion that this was obtained not from the volatile particles only, but perhaps because the flame carried with it whole parts of Nitre (as I say, according to the opinion of the very illustrious Mr. Boyle) and gave off together with the volatile parts also the fixed parts before they were dissolved: in

^{*} When I made this experiment the air was very clear.

order, I repeat, to remove this suspicion I made the smoke go up through a tube, like A, more than a foot long,

B

as through a chimney, so that the heavier parts might adhere to the tube, and I should only collect the more volatile parts passing through the narrower opening at B; and the experiment succeeded as I have said. I did not, however, wish to stop there, but, in order to examine the matter further I took a larger quantity of Nitre, liquefied it, and set fire to it with a live coal; and, as before, I placed a tube A over the crucible, and near the open-

ing B, so long as the flame lasted, I held a small piece of looking glass to which some matter adhered which became liquid on being exposed to the air, and, although I waited for several days, I could observe none of the effects of Nitre; but when I added Spirit of Nitre it was turned into Nitre. From this, it seems to me, I can conclude, first, that the fixed parts are separated from the volatile in the process of liquefaction, and that the flame drives the separated parts upwards; secondly that after the fixed parts have been separated from the volatile amid a crackling noise they cannot unite with them again: from which it may be concluded, in the third place, that the parts which had adhered to the flask and had coagulated into icicles were not the fixed parts but only the volatile parts.

The object of the second experiment is to show that the fixed parts are only the dregs of Nitre; because I find that the more Nitre is filtered, the more volatile it is, and the more apt to crystallize. For when I placed crystals of purified or filtered Nitre in a glass goblet

like A, and poured in a little cold water, it partly evaporated with the cold water, and these fugitive

particles adhered to the rim of the glass at the top and coagulated into small icicles.

The third experiment is one which seems to show that the particles of Spirit of Nitre, when they lose their own motion, are rendered inflammable. I trickled drops of Spirit of Nitre into a moist paper bag, and then sprinkled sand over it, through the pores of which the Spirit of Nitre continuously penetrated, and when the sand had absorbed all, or nearly all, the Spirit of Nitre, I dried it thoroughly in the same paper bag over the fire. This done, I removed the sand and placed the paper against a live coal, and the moment it caught fire it gave off sparks in the way it usually does when it has absorbed Nitre itself. If I had had the opportunity of making further experiments I would have added to these others, which perhaps would have made the matter clearer; but as I am much distracted by other matters, I shall, if you will forgive me, put this off until some other occasion, and proceed now to other considerations.

- § 5. Where the very illustrious Mr. Boyle treats in passing of the shape of the particles of Nitre, he blames modern writers because they have given a wrong account of it. I do not know whether he means to include Descartes among these. If he does, then he is perhaps blaming him because of what others have said about him. For Descartes does not speak about such particles as can be seen with the eyes. And I do not think that the very illustrious Mr. Boyle means that, if the flakes of Nitre were to be rubbed down until they were changed to parallelepipeds, or some other shape, they would then cease to be Nitre; but perhaps he is referring to some other Chemists who admit nothing but what they can see with their eyes and touch with their hands.
 - § 9. If this experiment could be carried out accurately,

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it would entirely confirm what I wished to conclude from the first experiment mentioned above.

In §§ 13 to 18 the very illustrious Mr. Boyle is trying to show that all tactile qualities depend only on motion, shape, and the remaining mechanical states. But, since these proofs are not put forward by the very illustrious Mr. Boyle, as mathematical, there is no need to see whether they are completely convincing. But in the meanwhile I do not know why the very illustrious Mr. Boyle is so anxious to conclude this from this experiment of his; for this has already been proved sufficiently and more than sufficiently by Verulam and afterwards by Descartes. And I do not see that this experiment provides us with any clearer proofs than other experiments which are sufficiently common. For, as far as heat is concerned, is not this equally clear from the fact that if two pieces of wood, although cold themselves, are rubbed together, they produce a flame simply as a result of the motion? or from the fact that lime sprinkled with water becomes hot? With regard to sound, I do not see that anything more remarkable is to be found in this experiment than is found in the boiling of ordinary water, and in many other things. But with regard to colour, to adduce only what can be proved, I will say nothing except that we see all green plants change into so many and such different colours. Moreover, if bodies which emit an evil odour are shaken, then they emit a worse odour, especially so if they become somewhat hot. Lastly sweet wine is turned into vinegar, and so with many other things. All these things, therefore * (if I may speak with philosophical candour) I should consider superfluous. This I say because I fear lest others, who esteem the very illustrious author less than is his due, should judge him wrongly.

§ 24. Of the cause of this phenomenon I have already

^{*} In the letter which I sent I omitted this advisedly.

spoken: here I will only add that I also have found by experience that particles of fixed salt float about in these saline drops. For when they flew upwards they touched a plate of glass which I held ready for the purpose, and which I had warmed a little so that whatsoever volatile particle adhered to the glass should fly off; when this had happened I perceived a coarse white

matter adhering here and there to the glass.

§ 25. In this section the very illustrious Mr. Boyle seems to want to show that the alkaline parts are carried hither and thither by the impact of the salt particles, but that the salt particles lift themselves into the air by their own force. In my explanation of the phenomenon I also said that the particles of Spirit of Nitre acquire a more violent motion because when they enter into the wider pores, they are necessarily surrounded by some very fine matter, and are driven off by it as particles of wood are driven off by fire; but the alkalised particles received their motion from the impact of those particles of Spirit of Nitre which had penetrated into the narrower pores. Here I add that pure water cannot so easily dissolve and soften the fixed parts: wherefore it is not surprising that when Spirit of Nitre is added to a solution of this fixed salt dissolved in water, there should begin such an ebullition as the very illustrious author describes in § 24; I even think that this ebullition will be more violent than if Spirit of Nitre were to be added to the fixed salt while it is still intact. For in water it is dissolved into very minute molecules, which can be more easily broken up, and more freely moved than when all parts of the salt lie on each other, and adhere firmly to one another.

§ 26. Of the taste of the acid of Spirit of Nitre I have already spoken; wherefore it only remains to speak of the alkali. When I placed this on the tongue, I felt a sensation of heat followed by a prick. This shows me that it is a kind of lime: for in the same way that lime is heated by means of water so this salt is heated by means of the saliva, or of perspiration, or of Spirit of Nitre, and perhaps even of moist air.

- § 27. It does not immediately follow that a particle of matter acquires a new shape because it is joined to another: it only follows that it becomes larger, and this is sufficient to produce the effect which the very illustrious author seeks in this section.
- § 33. What I think of the Philosophical Method of the very illustrious Mr. Boyle I will say when I have seen the Dissertation of which mention is made here and in the Introductory Note, page 23.

ON FLUIDITY.

- § 1. It is manifest enough that they are to be reckoned amongst the most general affections, etc. . . . I should think that notions which are derived from popular usage, or which explain Nature not as it is in itself, but as it appears to human sense, should by no means be numbered among the highest generic terms, nor should they be mixed up (not to say confounded) with notions which are pure and which explain Nature as it is in itself. Of this kind are motion, rest, and their laws; of the former kind are the terms visible and invisible, hot, cold and, to say it at once, fluid and firm, etc.
- § 5. The first is the littleness of the bodies that compose it, for in bigger parcels of matter, etc. Even if bodies are small they have (or can have) uneven and rough surfaces. Therefore if large bodies move in such a proportion that their motion is related to their mass as the motion of minute bodies is related to their mass, then they ought to be called fluid if the name fluid did not signify something extrinsic, and were not merely appropriated from popular use to mean those moving bodies whose minuteness and intervening spaces escape

human sense. Therefore to divide bodies into fluid and firm will be the same as to divide them into visible and invisible.

The same §. If we were not able to confirm it by chemical experiments. One will never be able to prove this by chemical or by other experiments, but only by reasoning and calculation. For by reasoning and calculation we divide bodies infinitely; and consequently also the Forces which are required to move them; but we shall never be able to prove this by experiment.

§ 6. Great bodies are too unwieldy to constitute fluid ones, etc. Whether by fluid is to be understood what I said just now, or not, the thing is obvious of itself. But I do not see how the very illustrious author proves this by the experiments brought forward in this section. For (since we want to doubt what is uncertain) however unsuitable bones may be for the formation of chyle and similar fluids, they may perchance be suitable enough for the formation of some new kind of fluid.

§ 10. And this by making them less pliant than formerly, etc. Without any change of the parts, but only because the parts which are forced into the receiving body are separated from the rest, they could coagulate so as to form another body more solid than oil. For bodies are lighter or heavier according to the kinds of fluid in which they are immersed. So particles of butter when floating in milk form part of the liquid; but when the milk is stirred and acquires a new motion to which all the parts composing the milk cannot equally accommodate themselves, the result is simply this, that certain of the heavier parts separate themselves and force the lighter ones to the surface. But since these lighter particles are so much heavier than air that they cannot form a liquid with it, they are forced down by it, and as they are unsuitable for motion, and cannot form a liquid by themselves, they lie on one another and adhere to each other. Vapours, too, when they are separated from the air are changed into water which may be said to be firm in comparison with air.

§ 13. And I choose an instance in a bladder distended with water rather than in a bladder filled with air, etc. Since the particles of water are always moving hither and thither unceasingly, it is clear that, if they are not prevented by surrounding bodies, they will make it expand in

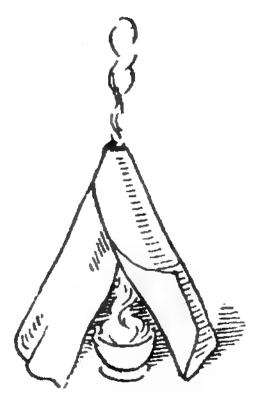
all directions; further I confess I am not yet able to see how the distention of a bladder full of water helps to confirm his opinion about the small spaces: for the reason why the particles of water do not yield when the sides of the bladder are pressed with the finger as they other-



wise would do, if they were free, is because there is no equilibrium or circulation such as there is when some body, say our finger, is surrounded by a fluid or by water. But however much the water is pressed by the bladder, yet its particles would yield to a stone which was also enclosed in the bladder, in the same way as they usually do outside the bladder.

The same §. Whether there may not be a portion of matter, etc. We must answer affirmatively unless we prefer to progress to infinity or (and nothing can be more absurd)

to grant the existence of a vacuum.



S 19. That the particles of the liquid find admittance into those pores, and are detained there (by which means, etc.). This must not be affirmed absolutely of all liquids which find admittance into the pores of others. For the particles of Spirit of Nitre if they enter into the pores of white paper make it rigid and friable;

which may be observed if a few drops are poured into a glowing iron evaporator, like A, and the smoke sent up

through a paper bag, like B. Moreover, even Spirit of Nitre softens leather yet does not really make it moist, but, on the contrary, makes it shrink, just as fire does.

The same §. Whom Nature having designed to fly sometimes in the air and to live sometimes in the water, etc. He seeks the cause in the purpose.

§ 23. Though their motion be but seldom perceived by us. Take then, etc. Without this experiment and without any ado the matter is sufficiently clear from the fact that our breath, which in winter time is clearly perceived to move, in summer time or in heated rooms cannot be perceived by us. Moreover, if in summer time the breeze cools suddenly, the vapours rising from water, which, because of the new density of the air, cannot be as easily dispersed throughout the air, as they could before it cooled, are gathered together again over the surface of the water in such quantities that we can see them clearly. Again a movement is often too slow to be perceived by us, as we can learn from the gnomon and the shadow of the sun, and very often it is too fast to be perceived by us, as may be seen in the case of lighted kindling-wood when it is moved with some speed in a circle; here, certainly, we imagine the lighted part to be at rest at all the places of the circumference which it describes by its motion. I would give the reasons for these things here, if I did not think it unnecessary. Lastly, let me say in passing that, for the understanding of the nature of a fluid in general, it is enough to know that we can move our hand about in it in all directions, with a motion proportionate to the fluid, without any resistance, as is sufficiently clear to those who pay due attention to those notions which explain Nature as it is in itself, and not indeed as it is presented to human sense. But I do not therefore look down upon this account as useless; but on the contrary, if of every liquid there were an account given as accurately as possible with the highest trustworthiness, I should consider it of the greatest service for the understanding of the special features which differentiate them: which is to be most earnestly desired by all Philosophers as something very necessary.

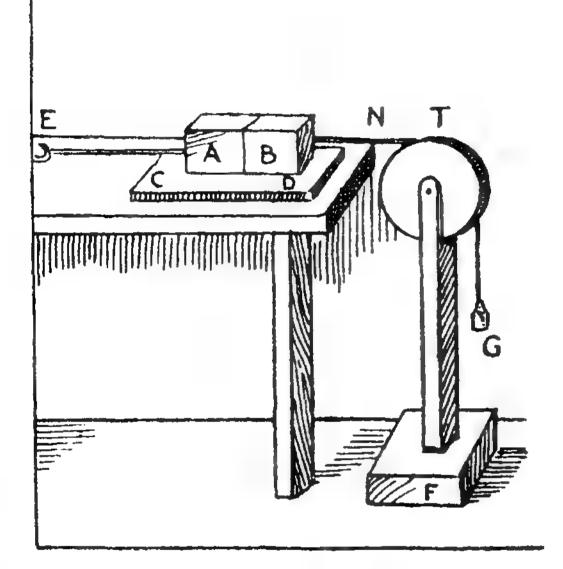
OF FIRMNESS.

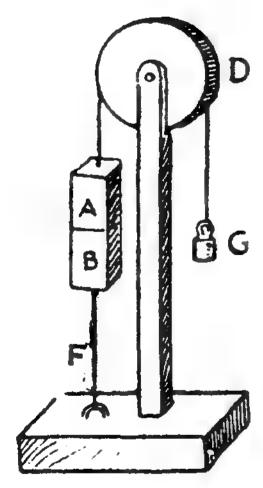
§ 7. It seems consonant to the universal laws of Nature. This is Descartes' proof; I do not see that the very

illustrious Mr. Boyle adduces any genuine proof derived from his experiments or observations.

I had made many notes on this and on what follows; but afterwards I saw that the very illustrious author corrects himself.

hundred and thirty two [ounces]. If it is compared with the weight of the quicksilver enclosed in the tube it comes near to the real weight. But I considered it worth while to examine this, in order as far as possible to ascertain both the proportion between





the lateral or horizontal pressure of the air and the perpendicular pressure, and I think it can be done in this way.

Let CD, in Figure 1, be a plane mirror, very accurately smoothed, A B two pieces of marble immediately touching one another; let the piece of marble A be attached to a hook E, but B to a cord N, T is a pulley, G a weight which will show the force that is required to pull apart the piece of marble B from the piece A in the horizontal direction.

In Figure 2, let F be a sufficiently strong silk thread by which the piece of marble B is tied to the floor, D a pulley, G the weight which may show the force which is required to pull apart the piece of marble A from the piece of marble B in the perpendicular direction. It is not necessary to explain these things more fully.

Here you have, my friend, what I find to be remarked about the experiments of Mr. Boyle. With regard to your first questions, when I look through my answers to them I do not see that I have omitted anything. And if perchance I have stated something obscurely (as I often do for want of words) I pray you to be kind enough to point it out to me. I will take pains to explain it more clearly.

With regard to your new question, namely, how things began to be and by what bond they depend on the first cause, I have written a whole booklet on this subject and also on the Improvement of the Understanding, and I have been engaged on copying it out and improving it. But sometimes I leave the work since I have not yet any definite plan for its publication. I am naturally afraid lest the theologians of our time take offence and with their usual hatred attack me, who utterly loathe quarrels. I shall await your advice on this matter, and in order that you may know what is contained in this work of mine that might be some small cause of offence to the preachers, I say that many attributes which they and all others at least who are known to me attribute to God, I regard as things

LETTER VI-TO OLDENBURG 1662

created; and on the other hand, things which they, on account of their prejudices, regard as created, I contend to be attributes of God, and as misunderstood by them; and also that I could not separate God from Nature as all of whom I have any knowledge have done. And so I await your advice; for I look to you as to a most faithful friend of whose good faith it would be wrong to doubt. In the meanwhile fare well and as you have begun so continue to love me who am

Yours entirely BENEDICTUS SPINOZA.

[RHYNSBURG, April 1662.]

LETTER VII

HENRY OLDENBURG

TO THE VERY ILLUSTRIOUS MR. B. D. S.

Reply to the Preceding.

Many weeks ago already, very illustrious Sir, I received your very welcome letter, with its learned comments on Boyle's book. The Author himself joins me in thanking you very much for the reflections which you have communicated to us: he would have signified his gratitude sooner had he not entertained the hope that he might in a short time be relieved from the mass of business with which he is burdened, and so be able at the same time to send you his answer together with his thanks. But he feels that so far his hope has deceived him, for he has been so disturbed with both public and private affairs that this time he can do no more than express his grateful feeling to you, and must put off until some other time the communication of his opinion on your Notes. It happens also that on the publication of his writings two Adversaries attacked him, and he feels himself bound to answer them at the very first

opportunity. These writings, indeed, are not directed against his Treatise on Nitre, but against his other little book which contains his Pneumatic Experiments proving the Elasticity of Air. As soon as he has completed these labours he will make known to you his views about your objections; but in the meantime he asks you not to put an unfavourable construction on this delay.

The Society of Philosophers of which I have spoken to you has now, by the King's grace, been converted into the Royal Society, and has been presented with a public Charter, whereby special Privileges are granted to it, and great hope is held out that it will be endowed

with the necessary revenues.

I would by all means advise you not to begrudge to scholars the results at which with your mental sagacity and learning you have arrived both in Philosophical and Theological matters; let them be published, however much the Theological quacks may growl. Your commonwealth is the freest, in it philosophy should be pursued with the greatest freedom: but your own prudence will suggest to you that you should express your ideas and your opinion with as much moderation as possible; for the rest, leave the issue to Fate. Come then, excellent Sir, and banish all fear of stirring up the pygmies of our time; long enough have sacrifices been made to ignorance and absurdity; let us spread the sails of true knowledge, and search more deeply into the innermost parts of Nature than has been done hitherto. I should think that your reflections could be printed in your country with impunity, and there is no need to fear that any of them will cause offence among the wise. If you find such for your patrons and supporters (and such, I answer for it, you will certainly find) why should you dread an ignorant Momus? I will not let you go, honoured Friend, until I have persuaded you; and, as far as it is in my power, I will

LETTER VII—FROM OLDENBURG 1662

never be content to let your thoughts, which are so weighty, be suppressed in eternal silence. I pray you urgently that you will not mind letting me know, as soon as you conveniently can, what decision you will adopt about this matter.

Maybe such things will happen here as will not be unworthy of your cognizance. For the afore-mentioned Society will now strive more eagerly to fulfil its purpose, and maybe, so long as peace lasts in these shores, will grace the Republic of Letters in no common manner.

Farewell, distinguished Sir, and believe me Your very devoted and very friendly HENRY OLDENBURG.

[London, July 1662.]

LETTER VIII

SIMON DE VRIES

To the Very Illustrious Mr. B. D. S.

Most upright Friend,

I have already long wished to be with you once but the weather and the hard winter have not been sufficiently favourable to me. Sometimes I complain of my fate in being removed from you by a distance which keeps us so long from one another. Happy indeed, very happy, is your companion Casearius who lives under the same roof, and can converse with you on the best subjects at breakfast, at dinner, and on your walks. But although our bodies are so widely separated from one another, yet you have been very often in my mind, especially when I am occupied with your writings, and hold them in my hands.

But since everything is not sufficiently clear to the members of our society (and that is why we have resumed our meetings) and also in order that you may not think that I have forgotten you, I made up my mind to write this letter.

As to the society, this is how it is conducted; one member (but each takes his turn) reads through, explains according to his conception, and, moreover, proves everything, following the sequence and order of your propositions; then, if it happens that we cannot satisfy one another, we think it worth while to make a note of it, and to write to you, so that, if possible, the matter may be made clearer to us, and that under your leadership we may be able to defend the truth against those who are superstitiously religious or even Christian, and to stand firm against the onslaught of the whole world.

So, since, on our first reading them through and explaining them, the definitions did not all seem clear to us, we did not all hold the same opinion about the nature of definition. In your absence we consulted meanwhile a certain author, namely, a mathematician called Borellus; when he states the nature of a definition, of an axiom and of a postulate, he also cites the opinions of others on this subject. His own opinion reads as follows: Definitions are employed in a proof as premises. Therefore they must be known clearly, otherwise scientific or the clearest knowledge cannot be derived from them. In another place he says: The ground of a construction or the essential first and best known phenomenon of any subject must not be chosen at random but with the greatest care. For if the construction and the said phenomenon be impossible, then the result will not be a scientific definition, as for instance, if some one were to say: "Let any two straight lines enclosing a space be called figurals." They would be definitions of the non-existent, and impossible; and consequently ignorance rather than knowledge would be derived from them. Again, if the construction, or the said phenomenon, be something possible and true, but yet unknown to us or doubtful, then also it will not be a good definition; for conclusions which are derived from something unknown and doubtful will themselves

LETTER VIII-FROM DE VRIES 1663

be uncertain and doubtful, and will therefore produce conjecture and opinion, but not sure knowledge.

Tacquet seems to differ from this opinion: he asserts, as you know, that it is possible to proceed directly from a false proposition to a true conclusion. Clavius, however, whose view he also introduces, is of this opinion: Definitions are arbitrary expressions, and it is not necessary to adduce a reason why something is defined in this way or that; but it is enough that the thing defined should never be asserted to correspond with some [real] thing, unless it can first be proved that the given definition does correspond with it. Thus Borellus will have it that the definition of anything ought to consist of a relation or construction which is first, essential, very well-known to us, and true. Not so Clavius: whether it be the first or the best known, or true or not, is of no importance so long as the definition we have given is not asserted to correspond with something [real], unless the given definition is first proved to correspond with it. We would rather follow the opinion of Borellus; but we do not really know with which of the two you, Sir, agree, or whether you agree with neither.

Therefore, since such various conflicting views are put forward about the nature of definition, which is included among the principles of demonstration, and since our thought is not relieved from the difficulties of this subject nor from those which result from it, we should very much wish that you, Sir, would write to us (if we are not causing you too much trouble, and if you have leisure to do so) what you yourself think about this subject, and also what is the distinction between axioms and definitions. Borellus does not admit any real difference between them, except in name: but I believe you maintain another difference.

Further, the third Definition is not sufficiently clear to us; I adduced as an example what you, Sir, said to

me at the Hague, namely, that a thing can be considered in two ways, either as it is in itself, or as it is in relation to something else. For instance the Understanding, for it can be considered either under Thought or as consisting of ideas. But we do not see clearly what this distinction is; for we suppose that if we conceive thought rightly, then we ought to reckon it with ideas, for if all ideas were removed from thought, we should destroy thought itself. With regard to this thing, since this example is not sufficiently clear to us, the thing itself is to some extent obscure and we need further explanation.

Finally, in the Third Scholium to Proposition 8, in the beginning, occurs the following statement: Hence it appears that although two attributes are conceived as really distinct (that is, one without the help of the other) yet they do not therefore constitute two entities or two different substances; the reason is because it is of the nature of a substance that all its attributes, I mean each one of them, should be conceived through itself, because they all existed in it at the same time. Thus you, Sir, seem to suppose that the nature of a substance is so constituted that it can have many attributes, which you have not yet proved, unless you refer to the fifth definition of the absolutely infinite substance, or God; otherwise, if I may say that each substance has only one attribute and if I had the idea of two attributes, then I could rightly conclude that where there are two different attributes there are also two different substances. We entreat you to give a clearer explanation also with reference to this.

Further, I thank you very much for your writings, which were conveyed to me by P. Balling, and gave me much pleasure. But especially the Scholium to Proposition 19.

If I can serve you here in anything that is in my power, then I am at your service; you have only to let me know.

LETTER VIII—FROM DE VRIES 1663

I have joined a course on anatomy, and I am about half-way through; when it is finished I shall begin a course on chemistry, and, as you advise, go through the whole medical course.

I stop and look forward to your answer. Accept greetings from me who am

Your very devoted

S. J. D'VRIES.

1663 GIVEN AT AMSTERDAM 24th February

SR. BENEDICTUS SPINOZA

AT RHYNSBURG 1663.

LETTER IX

B. D. S.

TO THE VERY LEARNED YOUNG MAN SIMON DE VRIES.

Reply to the Preceding.

(On the Nature of Definition and Axiom.)

HONOURED FRIEND,

I have received your letter which I have so long desired, and I thank you very much for it and for your affection towards me. Your long absence has been no less disagreeable to me than to you; meanwhile however I am glad that my night-work is of use to you and to our friends. For in this way I speak with you from afar while you are absent. You have no reason to envy Casearius. Indeed, there is no one whom I find more disagreeable, or with whom I have been more careful to be on my guard than with him; so that I should like you and all our acquaintances to be warned not to communicate my opinions to him until he shall have attained to a riper age. He is too boyish as yet, rather unstable, and more eager for novelty than for

truth. Yet I hope that he will cure himself of these puerile faults in a few years. Indeed I am almost sure of it, as far as I can judge from his nature; and so his character makes me fond of him.

With regard to the questions which have been propounded in your society (which is organized quite wisely) I see that you are perplexed by them because you do not distinguish between different kinds of definition. You do not distinguish between a definition which serves to explain a thing whose essence only is sought, and concerning whose essence alone there is doubt, and a definition which is put forward only to be examined. For the former, since it has a determinate object, ought to be true; the latter need not be. For instance, if someone were to ask me for a description of the Temple of Solomon, then I ought to give him a true description of the temple unless I want to talk nonsense. But if I have constructed in my mind some temple which I wish to build, and from the description of it I conclude that I must buy such and such land, so many thousand stones, and a certain quantity of other materials, would any sane man say that my conclusion is wrong because I have perhaps made use of a false definition? Or will any one ask me to prove my definition? This would be equivalent to telling me that I have not conceived what I have conceived, or demanding a proof that I have conceived what I have conceived: which is sheer trifling.

Therefore, a definition either explains a thing as it exists outside the understanding, and then it ought to be true, and does not differ from a proposition, or an axiom, except in so far as it deals only with the essences of things or of states, whereas an axiom is wider since it extends to eternal truths. Or else a definition explains a thing as it is conceived or can be conceived by us: and then, indeed, it differs from an axiom and a propo-

sition because all that is required of it is merely that it should be conceived, and not, like an axiom, that it should be conceived as true. Therefore that definition which is not conceivable is bad. In order to make this clear to you let me take the example given by Borellus, that is, if some one were to say, let any two straight lines which enclose a space be called figurals. If he understands by straight line what all other people understand by curved line, then his definition is good (for by that definition will be understood a figure such as (a) or similar figures), provided he does not afterwards mean by it squares and other figures. If, however, he understands by straight line what we commonly understand by it, the thing is clearly inconceivable, and therefore it is not a definition. All these things are thoroughly confused by Borellus, whose opinion you are inclined to embrace.

I add another example, namely, that which you adduce at the end. If I say that each substance has only one attribute, that is a mere assertion and needs demonstration. But if I say, by substance I understand that which consists of only one attribute, it will be a good definition, only after that I must call entities consisting of more attributes than one by some other name than substance.

As to your remark that I have not proved that substance (or being) can have more attributes than one, perhaps you did not pay sufficient attention to the proofs. For I have adduced two. The first is that there is nothing more evident to us than the fact that every entity is conceived by us under some attribute, and that the more reality or being an entity has the more attributes there must be attributed to it. So that the absolutely infinite being must be defined, etc. The second, to which I award the prize, is that the more attributes I attribute to any entity the more I am compelled to attribute existence to it, that is, the more do I conceive

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it as true. Quite the contrary would happen if I had

imagined a Chimæra or something similar.

As to your remark that you do not conceive of Thought except under ideas, because when you take away ideas you destroy thought, I believe that this happens to you because while you, who are a thinking being, do this, you set aside all your thoughts and conceptions. Therefore it is not to be wondered at that when you have set aside all your thoughts there remains nothing for you to think about. As regards the main thing, I think I have sufficiently plainly and clearly proved that intellect, even though infinite, pertains to created Nature, not to creating Nature.

But I do not yet see what this has to do with the understanding of the third definition, nor even why it should cause difficulty. For the definition as I gave it you, unless I am mistaken, reads as follows: By substance I mean that which is in itself and is conceived through itself, that is, whose conception does not involve the conception of some other thing. I mean the same by attribute, except that it is called attribute with respect to the intellect, which attributes such and such a nature to substance. This definition, I say, explains clearly enough what I wish you to understand by substance or attribute. You however wish me to explain by means of an example, which it is very easy to do, how one and the same thing can be called by two names. But, not to seem niggardly, I will supply two examples. First, I say that by the name Israel I mean the third Patriarch, I also mean the same Patriarch by the name Jacob, since the name Jacob was given to him because he had seized his brother's heel. Secondly by plane I mean that which reflects all the rays of light without any change; I mean the same by white, except that it is called white in relation to a man who is looking at the plane [surface].

With this I think I have fully answered your questions.

LETTER IX-TO DE VRIES 1663

Meanwhile I shall wait to hear your judgment; and if there is yet anything which you do not consider to be well or clearly enough demonstrated, then be not shy to point it out to me, etc.

[RHYNSBURG, March 1663.]

LETTER X
B. D. S.

TO THE MOST LEARNED YOUNG MAN SIMON DE VRIES.

HONOURED FRIEND,

You ask me whether we need experience to know whether the Definition of some Attribute is true. To this I reply, that we only need Experience in the case of whatever cannot be deduced from the definition of a thing, as, for instance, the existence of Modes: for this cannot be deduced from the definition of a thing. But we do not need experience in the case of those things whose existence is not distinguished from their essence, and therefore follows from their definition. Indeed, no experience will ever be able to teach us this: for experience does not teach us the essence of things; the utmost which it can effect is to determine our mind so that it only thinks of certain essences of things. Therefore, since the existence of attributes does not differ from their essence, we shall not be able to apprehend it by any kind of experience.

You ask furthermore whether even things or the states of things are eternal truths? I answer certainly. If you continue, why do I not call them eternal truths? I answer, in order that I may distinguish them, as all usually do, from those which do not explain any thing or any state of a thing, as, for instance, nothing is produced from nothing. This I say, and similar propositions, are called absolutely eternal truths, by which they wish to indicate nothing else than that such things have no place outside the mind, etc.

[RHYNSBURG, about March 1663.]

LETTER XI

HENRY OLDENBURG

To the Very Illustrious Mr. B. d. S.

Reply to Letter VI.

Most excellent Sir, dearest Friend,

I could produce many excuses for my long silence; but I shall reduce my reasons to two, the illness of the most Noble Boyle and the pressure of my own affairs. The former hindered Boyle from answering your observations on Nitre sooner; the latter have so occupied me for several months that I scarcely seemed to be my own master, and so could not discharge the obligation which I confess that I owed you. I rejoice that, for the time at least, both obstacles are removed, so that I can resume my intercourse with so great a friend. I do so indeed with the utmost pleasure; and I am determined (with Heaven's help) to exercise the greatest care that in future our correspondence shall not suffer so long an interruption.

But before I turn to those matters which concern you and me alone, let me deliver what is due to you in the name of Mr. Boyle. He has received the notes, which you made on his Chemico-Physical Treatise, with his usual kindliness, and he sends you his best thanks for your criticism. Meanwhile he desires you to be warned that the object that he had set before himself was not so much to show that this was a really philosophic and perfect analysis of Nitre, but rather to explain that the common Doctrine of Substantial Forms and Qualities which is also accepted in the Schools, rests on a weak foundation, and that what they call the specific differences of things can be reduced to the magnitude, motion, rest and position of their parts. After this preliminary remark, the Author says further that his experiment with Nitre was enough and more

LETTER XI-FROM OLDENBURG 1663

than enough to show that by chemical analysis the whole mass of Nitre broke up into parts which differed from one another and from the original whole; afterwards, however, it was so re-compounded out of these parts and reconstituted again that it fell little short of its original weight. He adds, too, that he has shown that this is the actual fact; he did not deal with the process of the thing, with which your conjecture seems to be concerned, nor did he determine anything about it, since to do so would have been beyond his design. Meanwhile, he thinks that your suppositions about the process, your view that the fixed salt of Nitre is as it were its dregs, and other similar suppositions, are gratuitous and unproved. As to your assertion that these dregs, or this fixed salt, has pores hollowed to the size of the particles of Nitre, on this point the Author remarks that the salt of potash combined with Spirit of Nitre produces Nitre just as much as Spirit of Nitre does when combined with its own fixed salt. Hence he thinks it clear that similar pores are to be found in bodies of that kind from which Nitric spirits are not given off. The Author does not see that the necessity of that very fine matter, which you set up in addition, is proved by any phenomena: it is assumed simply from the hypothesis that a vacuum is an impossibility.

What you assert about the causes of the difference in taste between Spirit of Nitre and Nitre itself, the Author says, does not affect him: but what you relate about the inflammability of Nitre and the non-inflammability of Spirit of Nitre he says presupposes Descartes' theory of fire, with which he declares he is not yet satisfied.

As to the Experiments by which you seek to confirm your explanation of the Phenomenon, the Author replies, first, that with regard to its matter, Spirit of Nitre is indeed Nitre, but by no means so with regard to its form, since they differ very much in their qualities

and virtues, namely, in taste, smell, volatility, the power of dissolving metals, and of changing the colours of vegetables, etc. Secondly, as to your remark that certain particles which are carried upwards combine into Crystals of Nitre, he maintains that this happens because Nitric particles are pushed out together with Spirit of Nitre through the action of fire, just as happens in the case of soot. Thirdly, to your observation on the effect of purification, the Author replies that in this purification, Nitre is, for the most part, freed from a certain kind of salt which is like common salt; and that the ascending and forming into icicles is common to this and to other salts, and depends on the pressure of the air and certain other causes, which must be discussed elsewhere, and have nothing to do with the present question. Fourthly, with regard to what you say about your third experiment, the author says that the same happens also with certain other salts; he asserts that the paper when it is actually alight agitates the rigid and solid particles which composed the salt, and in this way produces a scintillation with them.

Again, with regard to your idea that in Section 5 the noble Author is blaming Descartes, he believes that it is you who are to blame in this matter, and he says that he was in no way referring to Descartes, but to Gassendi and others, who attribute to the particles of Nitre a cylindrical form whereas it is really prismatic; nor was he speaking of other than visible forms.

To your notes on Sections 13–18 he merely replies that he wrote them in the first place in order to show and to make known the use of chemistry for confirming the Mechanical Principles of Philosophy, and he has not found these matters conveyed and discussed so clearly by other writers. Our Boyle belongs to the number of those who have not so much confidence in their reason as not to wish that the Phenomena should agree with

LETTER XI-FROM OLDENBURG 1663

their reason. Moreover, he says that there is a great difference between common experiments, where we do not know what Nature contributes and what other factors intervene, and those experiments in which it is known for certain what the additional factors are. Pieces of wood are much more composite bodies than the thing with which the Author deals. And in the boiling of ordinary water fire is added from outside which is not applied in our production of sound. Again, the reason why green plants change into so many and such different colours is still being sought. That this, however, is brought about by the change of the parts is shown by this experiment, from which it is clear that the colour was changed by the pouring on of Spirit of Nitre. Lastly, he says that Nitre has neither an offensive nor a sweet odour, but acquires an offensive odour merely in consequence of its dissolution, and loses it when it is re-compounded.

To your notes on Section 25 (the rest, he says, does not touch him) he replies that he has made use of the Epicurean principles, which will have it that motion is innate in the particles; for it was necessary to use some Hypothesis to explain the Phenomenon; yet he does not, on that account, make it his own, but uses it to maintain his own opinion against the Chemists and the Schoolmen, while showing that the fact can be well explained on the said hypothesis. To your comment on the powerlessness of pure water to dissolve the fixed parts our Boyle replies that chemists here and there observe and assert that pure water dissolves alkalised salts more rapidly than others.

The Author has not yet had time to devote to your notes on Fluidity and Firmness. I am sending you these things which I have noted down, so as not to be any longer deprived of learned intercourse and discussion with you.

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But I do most earnestly beg you to take in good part these very disconnected and disjointed replies which I am sending to you; you must ascribe this to my haste rather than to the mind of the illustrious Boyle. For I have put them together from friendly talk with him on this subject rather than from any dictated and methodical answer of his. Hence it happens, no doubt, that many of his remarks have escaped me which were perhaps more sound and better expressed than what I have here reported. I therefore take the whole blame upon myself, and absolve the Author entirely from it.

Now let me turn to our own affairs. And here at the very threshold let me ask you whether you have finished that very important essay in which you treat of the origin of things and of their dependence on the first cause as well as of the Improvement of our Understanding. Certainly, dearest Sir, I believe that nothing can be published that will be more welcome or more acceptable, to men who are really learned and wise, than a Treatise of that kind. This is what a man of your intelligence and genius should put before his eyes rather than the things that please the Theologians of our time and fashion: for they do not look for truth so much as for their own advantage. Therefore I adjure you by the bond of our friendship and by every duty of augmenting and spreading the truth, not to grudge or refuse us your writings on these subjects. If, however, there is some reason of greater moment than any I can foresee which may hinder you from publishing the work, I most earnestly beg you not to mind communicating to me a summary of it by letter; and for this service you will find me a grateful friend.

Other works by the very learned Boyle will shortly be published, which I will send you instead of a reward. To these I will also add others which will give you an account of the whole organization of our Royal Society,

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of the Council of which I am a member together with twenty others, and of which I am one of the Secretaries together with one other.

On this occasion I am prevented by shortage of time from being able to digress further. I promise you all the loyalty which can come from an honest mind, and every readiness for any services which can be rendered by my slender powers, and I am from my heart,

Most excellent Sir,
Yours entirely
HENRY OLDENBURG.

London, 3 April 1663.

LETTER XII

B. d. S.

To the Very Learned and Very Expert LUDOVICUS MEYER, P.M.Q.D.

(On the Nature of the Infinite.)

DISTINGUISHED FRIEND,

I have received two letters from you, one dated 11 January, and delivered to me by our friend N. N.; the other dated 26 March, and sent to me by some friend, I do not know by whom, from Leyden. Both were most welcome; particularly because I gathered from them that all is very well with you and that you frequently think of me. I give you, then, my best thanks, such as I owe you, for your kindness towards me, and for the honour which you have ever deigned to do me; and I beg you at the same time to believe that I am no less devoted to you, which I shall always endeavour to show, as much as my slender powers will allow, when the opportunity is given me. And to begin, I shall be careful to reply to the question which you ask me in your letters.

You ask me, then, to communicate to you the results

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of my thoughts about the Infinite, which I shall most gladly do.

The question concerning the Infinite has always seemed most difficult, or rather insoluble, to all, because they did not distinguish between what must be infinite because of its own nature, or in virtue of its definition, and that which has no limits, not indeed in virtue of its essence, but in virtue of its cause. And also because they did not distinguish between that which is called infinite because it has no limits, and that whose parts we cannot equate with or explain by any number, although we know its maximum and minimum. And lastly because they did not distinguish between that which we can only understand but cannot imagine, and that which we can also imagine. I say that if they had paid attention to these distinctions, then they would not have been overwhelmed by such a vast crowd of difficulties. For they would then have clearly understood which kind of infinite cannot be divided into parts, or can have no parts, and which, on the contrary, [has parts] and that without contradiction. Moreover, they would also have understood which kind of Infinite can be conceived as greater than another Infinite, without any complication, and which cannot be so conceived; as will become clearly apparent from what I shall soon have to say.

But, first, let me in a few words explain these four, namely, Substance, Mode, Eternity, and Duration. The things that I should like to be noted about Substance are the following—First, that existence pertains to its essence, that is, that its existence follows from its mere essence and definition: this, unless my memory deceives me, I have already proved to you some time ago by word of mouth without the help of other propositions. The second point, which follows from this first one, is that substance is not one of many, but

that there exists only one of the same nature. Thirdly and lastly, no substance can be conceived as other than infinite. I call the states of substance Modes, whose definition, in so far as it is not the definition of Substance, cannot involve existence. Therefore, although they exist, we can conceive them as non-existent, from which it also follows that when we are considering only the essence of Modes, and not the whole order of Nature, we cannot from the fact that they now exist deduce that they will exist or will not exist in the future, or that they existed or did not exist in the past. Hence it is clear that we conceive the existence of Substance as entirely different from the existence of Modes. Hence arises the difference between Eternity and Duration: for by means of Duration we can only explain the existence of Modes, but we can only explain the existence of Substance by means of Eternity, that is, the infinite enjoyment of existence or (in awkward Latin) essendi.

From all this it is clear that we can at will determine the existence and duration of Modes and conceive it as greater or less, and divide it into parts, when, as most frequently happens, we are considering their essence only and not the order of Nature. Indeed we can do so without thereby in any way destroying the conception which we have of them. But Eternity and Substance, since they cannot be conceived as other than infinite, cannot be treated thus without our destroying our conception of them at the same time. Therefore those who think that Extended Substance consists of parts, or of bodies really distinct from one another, are talking foolishly, not to say madly. For this is just as if one endeavoured, by merely adding together and accumulating many circles, to form a square, or a triangle, or something else different in its whole essence. Therefore that whole medley of arguments, by which Philosophers generally try to show that Extended Substance is finite,

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collapses of its own accord: for they all suppose that corporeal substance is composed of parts. In the same way others, who have persuaded themselves that a line is composed of points, could also find many arguments by which they would prove that a line is not divisible to infinity.

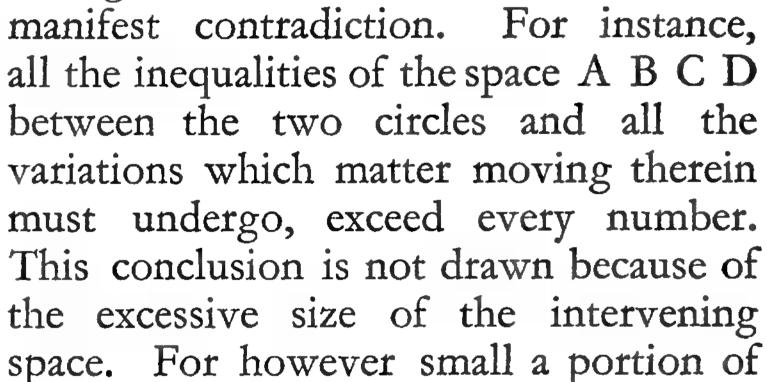
If however you ask why, by some natural impulse we are so prone to divide extended substance, I reply, because we conceive quantity in two ways, namely, abstractly or superficially, in so far as we have it in our imagination by the help of the senses; or as substance, which happens only through the intellect alone. And so if we consider quantity as it is in the imagination, as happens most frequently and more easily, it will be found to be divisible, finite, composed of parts, and one of many. But if we consider it as it is in our intellect, and if the thing is apprehended as it is in itself, which is very difficult to do, then, as I have sufficiently proved to you before now (if I remember rightly) it will be found to be infinite, indivisible and unique.

Moreover, because we can determine Duration and Quantity as we please, namely, when we conceive the latter abstracted from Substance and we separate the former from the mode whereby it flows from eternal things, there arise Time and Measure; Time to determine Duration and Measure to determine Quantity in such a way that, as far as possible, we may imagine them easily. Then because we separate the states of Substance from Substance itself, and reduce them to classes, so that, as far as possible, we may imagine them easily, there arises Number by which we determine them. Hence one can see clearly that Measure, Time and Number are nothing but Modes of thought or rather of imagination. Therefore it is not to be wondered at that all who have tried to understand the course of Nature by such Notions, and these moreover ill

understood, should have so marvellously entangled themselves that at length they could not extricate themselves except by breaking up everything and committing even the most absurd absurdities. For since there are many things which we cannot grasp with the imagination, but only with the intellect, such as Substance, Eternity, and others—if any one tries to explain such things by Notions of this kind, which are merely aids to the imagination, he does nothing more than take pains to rave with his imagination. And even the Modes of Substance themselves can never be rightly understood if they are confused with such things of Reason or with aids of the imagination. For when we do this we separate them from Substance and from the mode by which they flow from Eternity, without which, however, they cannot be rightly understood.

In order that you may see this still more clearly take this example: if anyone conceived Duration abstractly, and, confusing it with Time, began to divide it into parts, he would never be able to understand how, for instance, an hour can pass. For in order that the hour may pass it will be necessary for the half of it to pass first, and then a half of what is left, and then a half of what remains of this remainder; and if you thus go on indefinitely, subtracting the half of what is left, you will never be able to reach the end of the hour. Therefore, many who have not got used to distinguishing the things of reason from real things, have dared to declare that Duration is composed of moments, and so have rushed upon Scylla in their desire to avoid Charybdis. For to say that Duration is composed of moments is the same as to say that Number is obtained from the mere addition of noughts.

Moreover, as is sufficiently clear from what has just been said, neither Number, nor Measure, nor Time, inasmuch as they are only aids of the imagination, can be infinite. For otherwise Number would not be number, nor Measure measure, nor Time time. Hence one may see clearly why many who confused these three with real things, because they did not know the true nature of things, actually denied that there is an Infinite. But how lamentably they have argued let the mathematicians judge, whom arguments of this kind could not put off in matters which were clearly and distinctly perceived by them. For they have not only discovered many things which cannot be expressed by any number, which shows sufficiently the inadequacy of numbers to determine everything, but they also have many things which cannot be equated with any number but exceed any number that can be given. But they do not conclude that such things exceed every number because of the multitude of their parts, but because the nature of the thing cannot admit number without



it we take, yet the inequalities of this small portion will exceed every number. Nor is this conclusion reached because, as happens in other cases, we do not know the maximum and minimum—for we have both in this example of ours, namely, the maximum A B, and the minimum CD. The conclusion is only reached because the nature of the space interposed between two circles having different centres cannot be so treated. And so if any one wishes to determine all these inequalities by some definite number, then he will, at the same time, have to bring it about that a circle should not be a circle.

Similarly, to return to our point, if any one wishes to determine all the motions of matter which have taken place hitherto, namely, by reducing them and their Duration to a definite number and time, he will be attempting nothing else than to deprive corporeal Substance, which we cannot conceive except as existing, of its states, and to bring it about that it should not have the nature which it has. This, as also many other things on which I have touched in this letter, I could clearly prove here, did I not think it superfluous.

From all that has now been said one can clearly see that certain things are infinite in their own nature, and can in no wise be conceived as finite; that some, however, are so in virtue of the cause on which they depend, yet when they are considered abstractly, they can be divided into parts and viewed as finite; lastly, that some are said to be infinite or, if you prefer, indefinite, because they cannot be equated with any number, yet they can be conceived as greater or less. For it does not follow that those things which cannot be equated with any number are necessarily equal, as is sufficiently clear from the example adduced and from many others.

I have at last put briefly before your eyes the causes of the errors and confusions which have arisen about the question of the Infinite, and, unless I am mistaken, I have thus explained them all in such a way that I do not think that there remains any question about the Infinite on which I have not touched here, or which cannot be very easily answered from what has been said. Therefore I do not think it worth while to detain you any longer with these things.

But here I should like it to be noted in passing that the more recent Peripatetics, as I at least think, misunderstood the argument of the Ancients by which they strove to prove the existence of God. For, as I find it in the works of a certain Jew, named Rab Chasdai, it reads as follows. If there is an infinite regression of causes, then all things which exist will be things that have been caused. But it cannot pertain to anything that has been caused that it should necessarily exist in virtue of its own nature. Therefore there is in Nature nothing to whose essence it pertains that it should exist necessarily. But this is absurd: and therefore also that. Therefore the force of the argument lies not in the idea that it is impossible for the Infinite actually to exist, or that a regression of causes to infinity is impossible, but only in the impossibility of supposing that things which do not exist necessarily in virtue of their own nature, are not determined to existence by something which does exist necessarily in virtue of its own nature, and which is a Cause, not an Effect.

Since time forces me to hasten, I should now like to turn to your second letter: but I shall more easily be able to reply to its contents when you have deigned to visit me. Therefore, I beg you, if it can be done, to come as soon as possible: for the time of my removal is rapidly approaching.

That is all. Farewell and remember me, who am, etc.

RHYNSBURG, 20 April 1663.

LETTER XIII

B. D. S.

To the Very Noble and Learned Mr. HENRY OLDENBURG.

Reply to Letter XI.

Most Noble Sir,

Your letter, which I have long desired, I have at last received, and I am also free to answer it. But before I begin, I will briefly relate the reasons which hindered me from replying sooner.

When I transferred my household furniture here in

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the month of April, I went to Amsterdam. There certain friends asked me to prepare for them a copy of a certain Treatise containing a summary of the second Part of the Principles of Descartes, proved in the geometrical manner, and the most important problems which are discussed in Metaphysics, which I had dictated some time ago to a certain young man to whom I did not wish to teach my own opinions without reserve. Then they asked me to prepare as soon as I could also the first Part in the same method. Not to oppose my friends I immediately set myself to do this work, and finished it within two weeks, and gave it to my friends, who asked me finally to allow them to publish them all. This they were easily able to obtain, though on the condition that one of them should, in my presence, clothe them in more elegant style, and add a short Preface, in which he should warn Readers that I do not acknowledge as my own views all that is contained in this Treatise,* for I have written therein many things which are the very contrary of the views I embrace; and this he should show by means of an example or two. A certain friend of mine who is responsible for the publication of this little book, promised to do all these things, and for this reason I remained some time in Amsterdam.

Since my return to this village, in which I now live, I have scarcely been able to be my own master, because of the friends who deigned to visit me. Now at last, my very delightful Friend, I have some time over in which to tell you this, and at the same time to give you the reason why I allow the publication of this Treatise. Perhaps, on this occasion, there will be found some who hold the first places in my country, who will desire to see the other things which I have written and which I acknowledge as my own; and they will make it

^{*} In the letter which I sent I omitted this and everything else that is expressed in other letters [of the alphabet = italics].

their business that I should be able to publish them without any risk of trouble. Should this indeed happen, then I have no doubt that I shall publish some things immediately; but if not, I shall be silent rather than obtrude my opinions on men against the wishes of my country, and make them my enemies. Therefore, my honoured Friend, I pray you not to mind waiting till then: for then you shall have either a printed copy of the Treatise or the summary of it for which you asked me. And if, meantime, you would like to have a copy or two of the work which is now in the press, I will comply with your wish when I know it, and when I also know of some intermediary by whom I shall be able to send them conveniently.

I now return to your letter. I send you and the very Noble Boyle many thanks, as I ought, for your very clearly shown kindness towards me, and for your goodwill: for although the affairs with which you are occupied are so many, so important, and so weighty, they could not make you forget your Friend, nay you even kindly promise to take care in every way that our correspondence shall not in future be interrupted so long. I also give many thanks to the very learned Mr. Boyle for having deigned to reply to my Notes, in however cursory and preoccupied a manner. For my part, I confess that they are not of such importance that the very learned Mr. Boyle should spend time in answering them which he can devote to higher thoughts. I, indeed, did not think, I could not even have persuaded myself, that the very learned Mr. Boyle had set before himself in his Treatise on Nitre no other end than merely to show that the puerile and trivial doctrine of Substantial Forms, Qualities, etc., rests on a weak foundation; but since I persuaded myself that the very illustrious Mr. Boyle wished to explain the nature of Nitre, namely, that it is a heterogeneous body, consisting of

fixed and volatile parts, I wished to show in my explanation (as I think I showed sufficiently and more than sufficiently) that we can explain all the Phenomena of Nitre, at least all those that I know, very easily, even if we do not admit that Nitre is a heterogeneous body, but regard it as homogeneous. Therefore it was not necessary for me to show that the fixed salt was the dregs of Nitre, but only to suppose it, in order that I might see how the very illustrious Mr. Boyle could show me that this salt was not the dregs but was absolutely necessary to make up the essence of Nitre, which could not be conceived without it; since, as I say, I thought that the very illustrious Mr. Boyle wished to show this.

When, however, I said that the fixed salt has pores hollowed out according to the dimensions of the particles of Nitre, I did not need this to explain the redintegration of Nitre. For, as clearly appears from what I have said, namely, that its redintegration consists simply in the coagulation of the Spirit of Nitre, any calx, whose pores are too narrow to be able to contain the particles of Nitre and whose walls are weak, is able to resist the motion of the particles of Nitre, and therefore, according to my Hypothesis, to redintegrate the Nitre itself. Therefore it is no wonder that other salts, for instance salt of tartar and of potash, can be found, by whose help Nitre can be redintegrated. But I only said that the fixed salt of Nitre has pores hollowed out to the dimensions of the particles of Nitre, in order to give a reason why the fixed salt of Nitre is better suited to redintegrate the Nitre in such a way that it falls but little short of its original weight. Moreover, from the fact that there are found other salts by which Nitre can be redintegrated, I thought I could show that the calx of Nitre was not necessary for the essence of Nitre, had not the very illustrious Mr. Boyle said that there is no salt which is

more general (namely, than Nitre): and so it could be hidden in tartar and in potash. When I further said that the particles of Nitre in the larger pores are surrounded by a finer matter, I inferred this, as the very illustrious Mr. Boyle notes, from the impossibility of a vacuum; but I do not know why he calls the impossibility of a vacuum an Hypothesis, since it clearly follows from the fact that nothing has no properties. And I am surprised that the very illustrious Mr. Boyle should doubt this, since he seems to declare that there are no real accidents: but, I ask, will there not be a real accident if there be Quantity apart from Substance?

With regard to the causes of the difference in taste between Spirit of Nitre and Nitre itself, I was obliged to put them forward in order to show how I could very easily explain its Phenomena from the sole difference which alone I am prepared to admit between Spirit of Nitre and Nitre itself, without taking account of the fixed salt.

What I communicated about the inflammability of Nitre and the non-inflammability of Spirit of Nitre supposes no more than that in order to produce a flame in any body there is required a matter which separates the parts of that body and sets them in motion; both of which I think daily experience and reason teach sufficiently.

I pass on to the experiments which I adduced to confirm my explanation, not absolutely, but, as I expressly said, to a certain extent. And so the very illustrious Mr. Boyle advances against the first experiment which I submitted nothing but what I myself expressly said: but as for the rest, namely, about my attempt to save from suspicion that which the very illustrious Mr. Boyle and I have both remarked, he says absolutely nothing. As to what he then says about my second experiment, namely, that through purification

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Nitre is for the most part freed from a certain salt like common salt, this he only says, but does not prove. For I, as I expressly said, did not bring forward these experiments completely to confirm by them the things which I had asserted, but only because those experiments, which I had asserted and shown to be consistent with reason, seemed to confirm them to a certain extent. As to his remark that the fact of rising to form icicles is common to it and to other salts, I do not see what that has to do with the matter: for I admit that even other salts have dregs, and are rendered more volatile when they are freed from them. Against the third experiment I do not see that anything is adduced that touches me. In the fifth section I thought that the noble author blamed Descartes, as he did even in other places, relying on the liberty of philosophizing which is conceded to anyone, and which does not hurt the dignity of either party; so even others will probably think with me, if they have read the writings of the very illustrious Mr. Boyle and the Principles of Descartes, unless they are expressly warned. I do not yet see that the very illustrious Mr. Boyle explains his opinion clearly: for he does not yet say whether Nitre ceases to be Nitre if its visible icicles, of which alone he says he is speaking, are rubbed until they are changed into parallelepipeds, or into another figure.

But I leave these questions and turn to what the very illustrious Mr. Boyle sets down in Sections 13–18, and I say that I willingly admit that this redintegration of Nitre is indeed an excellent experiment for investigating the very nature of Nitre, that is, when we have learnt first the Mechanical principles of philosophy, and that all variations in bodies come about in accordance with the laws of Mechanics; but I deny that this follows any more clearly and more evidently from the experiment just mentioned than from many other common

experiments, from which, however, this does not follow. When the very illustrious Mr. Boyle says that he has not found these views of his so clearly explained and discussed by others, perhaps, he has something, which I cannot see, to urge against the arguments of Verulam and Descartes, by which he thinks he can refute them. I do not cite these arguments here, because I do not think that the very illustrious Mr. Boyle does not know them: this, however, I will say, that they too wished that the phenomena should agree with their Reason; if nevertheless they were mistaken in some things, they were men, and I think that nothing human was alien to them.

He says, further, that there is a great difference between those experiments (that is, the common and doubtful experiments which I adduced) about which we do not know what Nature contributes to them, and what other factors intervene, and those experiments wherein it is quite certain what the contributory factors are. But I do not yet see that the very illustrious Mr. Boyle has explained to us the nature of the things which are employed in this thing, that is, the nature of the calx of Nitre or of Spirit of Nitre; so that these two seem to us no less obscure than the things which I instanced, namely common lime and water, from the mixture of which heat results. With regard to wood, I admit that this body is more composite than Nitre; but as long as I do not know the nature of either and the way in which heat arises in either of them, what, I ask, does it matter? Then I do not know on what ground the very illustrious Mr. Boyle ventures to assert that, in this thing of which we are speaking, he knows what Nature contributes. How, I pray, will he be able to show us that this heat did not arise from some very fine matter? Perhaps because so little was lost of the original weight? But if nothing had been lost, I do not think that any conclusion could be drawn. For we see how easily things can be dyed

a certain colour from a very small amount of matter, without becoming thereby sensibly heavier or lighter. Therefore, I can doubt, and not without reason, whether certain things may not perhaps have been present which could not be observed by any sense; especially so long as it is not known how all those variations, which the very illustrious Mr. Boyle observed when experimenting, could arise from the said bodies. Indeed, I hold it for certain that the heat and that effervescence which the very illustrious Mr. Boyle describes arose from adventitious matter. Then I think that I can more easily conclude from the ebullition of water (I say nothing now of its agitation) that the disturbance of the air is the cause from which sound arises, than from this experiment, where the nature of the concurring factors is entirely unknown, and in which heat is indeed observed, but it is not known how or from what causes it has originated. Lastly, there are many things which give off no odour whatsoever, yet if their parts are shaken in some way and grow hot, an odour is perceived immediately, and if they grow cold again they again have no odour (at least as far as human sense is concerned) as, for example, amber and other things of which I do not even know whether they are more composite than Nitre.

My notes on the twenty-fourth section show that Spirit of Nitre is not pure spirit, but abounds in calx of Nitre and other things; and that I therefore doubt whether the very illustrious Mr. Boyle could have observed with sufficient care what he says that he has discovered with the help of the scales, namely, that the weight of the Spirit of Nitre, which he dropped in, approximately equalled the weight of that which was lost during the detonation.

Lastly, although, as far as the eye is concerned, pure water can dissolve alkalised salts more rapidly, yet,

since it is a more homogeneous body than air is, it cannot, as air can, have so many kinds of corpuscles which can find their way into the pores of every kind of calx. Therefore, since water consists principally of definite particles of one kind, which can dissolve calx up to a certain point, whereas air cannot do so, it follows that water will dissolve calx up to that point far sooner than air will. But since, on the other hand, air consists of grosser as well as of much finer particles, and of all kinds of particles, which can penetrate far narrower pores than those which the particles of water can penetrate, the particles of air can find an entry in many ways. Hence it follows that air, although it cannot do so as quickly as water can (which does not consist of so many particles of every kind), can dissolve calx of Nitre far better and more finely, and make it more inert and therefore more able to resist the motion of the particles of Spirit of Nitre. For I am not so far compelled by the experiments to recognize any difference, between Spirit of Nitre and Nitre itself, other than that the particles of the latter are in a state of rest, whereas those of the former jostle against each other in great agitation. So that there is the same difference between Nitre and its Spirit as there is between ice and water.

But I dare not detain you longer on these matters: I fear I have been too prolix, although I have tried to be as brief as I could: if nevertheless I have been wearisome I pray you to overlook it, and at the same time to take in good part the free and sincere utterances of a Friend. For I judged it ill-advised to keep absolute silence on these matters when replying to you. Yet to praise those things which pleased me little would be sheer flattery, than which I consider nothing is more dangerous and more pernicious in Friendship. I therefore determined to open my mind to you very frankly; and I thought that nothing would be more

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welcome to philosophers than this. Meanwhile if you think it more advisable to consign these thoughts to the fire than to communicate them to the very learned Mr. Boyle, they are in your hands; do as you please, only believe me most devoted and most friendly to you and to the very noble Boyle. I am sorry that owing to my slender means I am unable to show this except in words: however, etc.

Voorburg, $\frac{17}{27}$ July 1663.

LETTER XIV

HENRY OLDENBURG

To the Very Illustrious Mr. B. D. S.

Most illustrious Sir, much honoured Friend,

I find in the renewal of our correspondence a great deal of happiness. And so you may know that it was with extraordinary joy that I received your

letter addressed to me on $\frac{17}{27}$ July, especially so for the

double reason, that it gave evidence of your well-being and because it makes me more certain of the constancy of your friendship for me. To crown it all there is added your announcement that you have sent to the press the first and second parts of the *Principles* of Descartes demonstrated in the geometric manner, and your very generous offer to me of one or two copies of it. I accept the gift most willingly, and I pray you, if you please, to send the Treatise, which is already in the press, to Mr. Peter Serrarius, who lives at Amsterdam, for transmission to me. For I have commissioned him to receive a small packet of this kind, and to forward it to me by a friend who is crossing shortly.

For the rest, allow me to say that I bear it with impatience that you should even now suppress those

writings which you acknowledge as yours, especially in a Commonwealth that is so free that you are allowed there to think what you like and to say what you think. I should like you to break through those barriers, especially when you can conceal your name, and in this

way place yourself beyond all chance of danger.

The very noble Boyle has gone away: as soon as he has returned to town I will communicate to him that part of your very learned letter which concerns him, and will write to you his opinion on your views as soon as I have obtained it. I think you have already seen his Sceptical Chymist, which was published some time ago in Latin, and has been widely circulated abroad: it contains many Chemico-Physical paradoxes, and subjects to a severe examination the Hypostatical Principles (as they call them) of the Spagyrists.

He has lately published another little book which perhaps has not yet reached your booksellers: therefore I am sending it to you enclosed herewith, and I warmly pray you to accept this small gift kindly. The little book, as you will see, contains a defence of the elasticity of the air against a certain Francis Linus, who makes a great to-do to explain the Phenomena mentioned in Mr. Boyle's New Physico-Mechanical Experiments in a subtle manner which eludes all understanding and sense. Read through and consider the little book and communi-

cate to me your views about it.

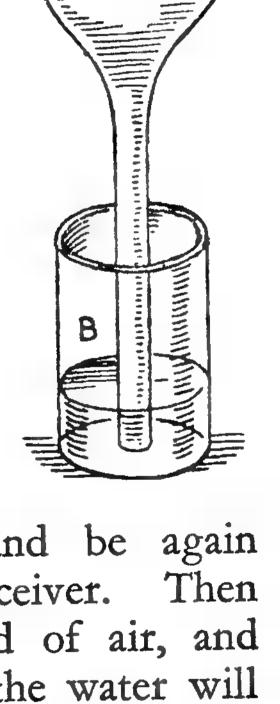
Our Royal Society is diligently and earnestly pursuing its purpose, confining itself within the limits of experiments and observations, and avoiding all the intricacies of Disputations.

Recently an excellent experiment was undertaken which gives much concern to those who believe in a vacuum, but very much pleases those who believe that space is a plenum. However, it is this. Let a glass phial A, filled to the brim with water, and placed with

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its opening turned down in a glass jar B, containing water, be placed in the Receiver of Mr. Boyle's New Pneumatic engine; next let the air be exhausted from the Receiver: bubbles will be seen to ascend in great quantities from the water into the phial A, and to force down the water from thence into the jar B, under the surface of the water contained therein. Let the two small vessels be left in this state for a day or two, the air being pumped out of the said Receiver repeatedly by means of frequent pumpings. Then let them be removed

from the Receiver, and the Phial A be filled again with this water freed from air, and again inverted in the jar B, and let both vessels be again enclosed in the Receiver. The Receiver again being exhausted by means of the requisite amount of pumping, perhaps a small bubble will be perceived to ascend from the neck of the Phial A, which, emerging at the top and expanding itself by reason of the continual pumping, again forces down all the water out of the Phial, as before. Then let the Phial again be taken from the Receiver, and be filled again to the brim with water from



which the air has been exhausted, and be again inverted as before, and placed in the Receiver. Then let the Receiver be thoroughly emptied of air, and when it is duly and completely empty, the water will remain suspended in the Phial in such a way as not to descend at all. In this experiment the cause, which, according to Boyle, is believed to sustain the water in the Torricellian experiment (that is, the air which presses upon the water in the vessel B) clearly seems to be removed, and yet the water in the Phial does not descend.

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I had intended to add more here but my friends and affairs call me away. I will only add this. If you like to send me the things which you are having printed, please address your letters and parcels in the following

way, etc.

I cannot conclude the letter without urging on you again and again the publication of those things which you yourself have thought out. I shall never cease to exhort you until you satisfy my request. Meanwhile if you were willing to disclose to me certain chapters of their contents, oh! how I should love you and how closely bound to you I should consider myself. Fare well, very well, and continue to love me as you do.

Your most devoted and most friendly HENRY OLDENBURG.

LONDON, 31 July 1663.

LETTER XV

B. DE SPINOZA

OFFERS CORDIAL GREETINGS TO MR. LUDOVICUS MEYER.

DEAREST FRIEND,

The Preface which you have sent to me by our friend de Vries, I return through him. As you yourself will see, I have made a few notes in the margin, but there remain a few things which I thought it more advisable to point out to you by letter.

Namely, first, when on page 4 you inform the reader of the occasion on which I wrote the first part, I should like you, either there or wherever you please, also to inform him that I wrote it within two weeks. Thus fore-warned, no one will think that these matters are so clearly presented that they cannot be explained more clearly, and they will not be held up by one or two small words here and there which they may perhaps find obscure.

Secondly, I should like you to warn people that I

prove many things in a way that is different from that in which they were proved by Descartes, not in order to correct Descartes, but only the better to retain my own order, and not to increase the number of axioms, and that for the same reason I prove many things which Descartes merely asserts without any proof, and that I have had to add other things which Descartes omitted.

And, lastly, I want to ask you most earnestly, my dearest friend, to omit what you wrote at the end against that petty man and to delete it entirely. And although there are many reasons which urge me to ask you this, I will mention only one. I should like all men to be able easily to persuade themselves that these are published for the good of all men, and that you, in publishing this little book, are mastered simply by a desire to spread the truth, and that you are doing all in your power to make this little work welcome to everyone, and to induce men, in a kindly and friendly way, to take up the study of true philosophy, and to pursue the good of all. This everyone will easily believe when he sees that no one is hurt, and that nothing is put down which can be even slightly offensive to anyone. If, however, afterwards that man or any other choose to show his malevolent mind, then you will be able to depict his life and character, not without approval. Therefore I ask you not to mind waiting till then and to allow yourself to be persuaded, and to believe me your most devoted and

in all affection yours

B. DE SPINOZA.

Voorburg, 3 August 1663.

Our friend de Vries had promised to take this with him, but since he does not know when he will return to you, I am sending it by someone else.

Together with this letter I send you a part of the Scholium to Proposition 27 of Part 2, where page 75

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begins, in order that you may give it to the printer, to

be printed anew.

These things which I send herewith must necessarily be printed anew, and 14 or 15 lines must be added, which can easily be inserted.

LETTER XVI

HENRY OLDENBURG

TO THE VERY ILLUSTRIOUS MR. B. D. S.

Excellent Sir and most honoured Friend,

Scarcely three or four days have elapsed since I sent you a letter through the ordinary post. In that letter I mentioned a certain little book written by Mr. Boyle, which was to be sent to you. At that time there appeared to be no hope of finding a friend so soon who would deliver it. Since that time some one has come forward sooner than I had thought. So you may now receive what could not be sent to you then, along with the most dutiful greetings of Mr. Boyle who is now returned to Town from the country. He asks you to consult the preface which he wrote to his Experiments on Nitre, and you will then understand what was the real aim which he set before himself in this work; namely, to show that the doctrines of the new and more solid Philosophy are elucidated by clear experiments, and that these [experiments] can be excellently explained without the forms, qualities, and trivial elements of the Schools; but he by no means took it upon himself to teach what is the nature of Nitre, or even to disprove what can be said by anyone about the homogeneity of matter, or about the differences of bodies which arise merely from motion and figure, etc. This only, he says, he wished to show, that the various textures of bodies produce their various differences, and that from these proceed very different effects, and that therefore so long as analysis into primary

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amice Luarusione

Drafationem, quam mili per amocum sostium de vicas misisti, en tili ger eundez remitto pauca, ut ipse videlis, in margina notare sed aduc parea supersunt, qualité per literas significare consulting durei. nempe 1. usi pag 4. in bestores mones, que ocasione primam partem composuerion, vellem ut himsel its, aut uti placuevit, etiam moneres me camintra duas Reldomadas compositive his enum promonito nemo gutabit- hac ades clave propone, ut de que charins explican non possent adeof Verbilo une, aut alters, quod forte hic illie 16= scurum of endent, non havebunt - 2. Vellum moners one mula alio moro quam a Greeno semons rata sunt Demonstrave, no ut Carlesium corrigam, De tantoum, ut meum ordinam malius retineam, chromerum assis matum non it a agerem. et hac etiam à causa multa, que a Carterio ried a sina ulla demonstratione proponentur, demonstrare, et alia, que cartains prissa fecit audevedebuisse denig enixissima le rogare vole, amice charis: 3. 3. sime, ut illa, que in fine serigisto, est illum homuncilium mine facery at iff proving delever et quaming as her te regardim facile generalere posint, Rac in omnium gratum everlyan ted in her likelis edenso dolo veritatis Deside 1. o Teneri, teg ours macime curave, ut loc omniby grahum sit, komines of at vera philosophia ato benigne invitation omnung utilitati guod facile aurusquist credet uti neminem Bivideht. nec aliquid proponi, quer aliens offendicuto esse gotest- quod di tumen peto igitur ut asusa expectare ron gravery, tel excoun et matibiadistissioner creas ata

FACSIMILE OF LETTER XV WITHOUT THE P.S.



LETTER XVI-FROM OLDENBURG 1663

matter has not been made, a certain heterogeneity is rightly inferred by Philosophers and by others. I should not think that there is any disagreement between you and Mr. Boyle on the fundamental question.

But as to what you say that any calx whose pores are too narrow to hold particles of Nitre and whose walls are weak is able to resist the motion of the particles of Nitre and therefore the redintegration of Nitre itself, Boyle answers that if Spirit of Nitre is mixed with other kinds of calx it will not for all that combine with them to form real Nitre.

As regards the Argument which you use to disprove the existence of a vacuum, Boyle says that he knows it, and has seen it before, but by no means assents to it: he says that there will be an opportunity to discuss the matter elsewhere.

He requested me to ask you if you can supply him with an example in which two odorous bodies, when combined into one, compose an entirely odourless body (namely Nitre). He says that such are the parts of Nitre: for its Spirit spreads a most offensive smell, and fixed Nitre is not destitute of odour.

Moreover, he asks you thoroughly to consider whether the comparison which you have instituted of ice and water with Nitre and its Spirit, is a proper one: for all ice is only resolved into water, and odourless ice, when it has turned again into water, remains odourless: but as between Spirit of Nitre and its fixed salt their qualities will be found to be different, as the printed Treatise fully teaches.

These and similar things I gathered from the illustrious Author in the course of conversation about this subject; but I am sure that owing to the weakness of my memory I reproduce them in a manner likely to do him harm rather than to do him credit. Since you are in agreement on the principal point of the matter, I will not enlarge

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on it any further: rather I would bring it about that you should unite your mental gifts to cultivate earnestly a genuine and solid philosophy. Be it permitted to me especially to advise you to continue to pursue with energy the principles of things with the keenness of your mathematical mind: as I incessantly urge my Noble friend Boyle to confirm and elucidate them by experiments and observations frequently and accurately made.

You see, my dearest Friend, what I am aiming at, what I am striving to attain. I know that our native philosophers in this Realm will in no way abandon their experimental gifts; and I am no less convinced that you will act strenuously in your province, however much the mob of Philosophers or of Theologians may howl or complain. As I have already exhorted you to this end in several previous letters I restrain myself now lest I make you weary. I only make this further request, that you will deign to send me as quickly as possible by Mr. Serrarius whatever has already been committed to print, whether it be your commentary on Descartes or something drawn from your intellect's own stores. You will hold me so much more closely bound to you and you will understand that whatever opportunity may present itself

I am

Your most devoted HENRY OLDENBURG.

London, 4 August 1663.

LETTER XVII

B. D. S.

To the Very Learned and Prudent Mr. PETER BALLING.

My DEAR FRIEND,

Your last letter written, if I am not mistaken, on the 26th of last month has come into my hands

safely. It has caused me no little sadness and anxiety, although this has certainly diminished now that I dwell on your good sense and strength of mind, by which you know how to despise the adversities of fortune, or rather of fancy, at the very time when they are assailing you with their strongest weapons. But my anxiety daily grows more; and therefore I beseech and adjure you by our friendship not to mind writing to me fully.

As to the omens of which you make mention, namely, that while your child was still well and strong you heard sobs like those it uttered when it was ill and just before it died, I should think that this was not a real sobbing but only your imagination; since you say that when you raised yourself and adjusted yourself to listen, you did not hear them as clearly as before, or afterwards, when you had fallen asleep again. Surely this shows that those sobs were nothing but pure imagination, which being unfettered and free, was able to imagine certain sobs in a more distinct and vivid manner than at the time when you raised yourself and directed your attention to the particular place of the sound.

I can confirm and at the same time explain what I have just said by something which happened to me at Rhynsburg last winter. When I awoke one morning, when the sky was already growing light, from a very heavy dream, the images which had come to me in my dream remained as vividly before my eyes as if they had been real things, especially the image of a certain black and scabby Brazilian whom I had never seen before. This image for the most part disappeared when, in order to divert myself with something else, I fixed my eyes on a book or some other object: but as soon as I again turned my eyes away from such an object and fixed them on something inattentively, the image of the same Ethiopian again appeared with the same vividness, and that again and again until gradually it disappeared

from my presence. I say that what happened to me with my inner sense of sight happened also with your hearing. But since the cause was very different, your case was an omen, but mine was not. The matter will be clearly understood from what I will now describe.

The effects of the imagination arise from the constitution either of the Body or of the Mind. This, in order to avoid all prolixity, I will for the present prove only from experience. We find that fevers and other physical changes are the causes of delirium, and that those who have thick blood imagine nothing but quarrels, troubles, murders, and the like. But we see that the imagination is also determined to a great extent by the constitution of the soul; for, as we know from experience, in all things it follows the traces of the intellect and concatenates its images and words in a certain order, and interconnects them, just as the intellect does with its demonstrations; so much so that there is almost nothing that we can understand of which the imagination does not form some image from the trace thereof. Since this is so, I say that all the effects of the imagination that proceed from physical causes can never be omens of future events; because their causes involve no future thing. But the effects of imagination, or images that derive their origin from the constitution of the Mind can well be omens of some future event; since the Mind can confusedly have a presentiment of something yet to come. Therefore this can be as firmly and vividly imagined as if something of that kind were present.

Thus a father (to take an example similar to your case) so loves his son that he and his beloved son are like one and the same being. And since (according to what I have proved on another occasion) there must necessarily exist in Thought the idea of the states of the essence of the son, and their consequences, and since the father, because of this union with his son, is

a part of the said son, the soul of the father must necessarily participate in the ideal essence of the son, and in its states and their consequences, as I have proved elsewhere more fully. Further, since the soul of the father participates ideally in those things which follow from the essence of the son, he (as I said) can now and then imagine one of the things which result from the son's essence as vividly as if he had it before him, that is, if the following conditions are fulfilled. I. If the event which happens to the son in the course of his life is important. II. If it is such that we can very easily imagine it. III. If the Time at which the event will occur is not too remote. IV. Lastly, if the body is not only of a sound constitution as regards health, but if it is also free, and exempt from all those cares and affairs which, coming from outside, confuse the senses. In this matter it may also be useful to think of such things as excite ideas very similar to these. For example, if while we are speaking with this or that man we hear sobs, it will often happen that when we think of the same man again, then these sobs, perceived with our ears when we spoke with him, will come into our memory again.

This, my dear Friend, is my view about your question. I confess I have been very brief; but I have taken pains to supply you with material for writing to me at the first opportunity. Etc.

Voorburg, 20 July 1664.

LETTER XVIII WILLIAM VAN BLYENBERGH

TO THE VERY ILLUSTRIOUS MR. B. D. S.

SIR AND UNKNOWN FRIEND,

I have already given myself the honour of reading through your Treatise, which has recently been published, pretty frequently and attentively, as also its Appendix. It will be more fitting for me to tell

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others rather than yourself of the very great solidity which I found in it, and of the pleasure which I derived from it: but I cannot refrain from saying this much, that the more frequently I read it with attention the more I am pleased with it, and that I continually observe something which I had not noticed before. But in this letter (lest I appear to be a Flatterer) I will not express too much admiration for the Author: I know that the Gods sell all things at the price of toil. But not to keep you wondering too long who it is and how it happens that someone who is unknown to you ventures to take such a great liberty as to write to you, I will tell you that he is one who, impelled by the sheer desire for pure truth, endeavours in this brief and transitory life, as far as human intelligence permits, to set his feet firmly in knowledge: one who, in his search for truth, sets before himself no other object than truth itself; one who seeks to obtain for himself through science neither honours nor riches, but truth alone, and peace of mind as a result of truth: and one who, among all truths and sciences, does not find more pleasure in any of them than in Metaphysics, at least in certain parts of it, if not in all of it, and finds his whole joy of life in devoting thereto the hours of leisure which he has to spare. But not everyone is so fortunate, or not everyone applies so much diligence as, I imagine, is the case with you, and therefore not everybody attains to the degree of perfection which I observe already in your work. In a word, it is one whom you may get to know better, if you will kindly so greatly oblige me as to help to open a way and penetrate through my tangled thoughts.

But to return to your Treatise. Just as I found many things therein that pleased my taste very much, so also I encountered some things which I could not very well digest. It would not be right for me, who am a stranger to you, to complain thus, the more so as I do not know whether it will please or displease. This is the reason why I send you this first, with the request that, in case you have time and inclination in these winter evenings to oblige me to the extent of answering the difficulties which I still find in your book, you will let me send you some of them, though with the proviso that you should not be hindered thereby from doing anything that is more necessary or more pleasant. For I desire nothing more strongly than the fulfilment of the promise made in your Book to publish a fuller development of your views. What I at last entrust to my pen I would have put to you orally, when coming to greet you, but since I was prevented first [by not knowing] where you were living, and then by the contagious disease, and lastly by my business, this was postponed time after time.

However, in order that this letter may not be entirely empty, and because I hope that you will welcome it, I will here submit this one thing only: namely, in several places, in the Principles as well as in the Metaphysical Thoughts, in order to explain either your own opinion or that of Monsieur Descartes, whose philosophy you were teaching, you assert that to create and to preserve are one and the same thing (which is so self-evident to those who have directed their thoughts to it that it is a fundamental notion), and that God not only created substances, but also the motions in the substances, that is, that God not only maintains the substances in their state, by a continuous creation, but also preserves their motions and strivings. For instance, God by His immediate volition or action (whichever one may like to call it) not only makes the soul continue to exist, and persevere in its state, but He also causes it to be related in such a way to the motions of the Soul. That is, just as God's continuous creation makes things continue to exist, so also within the things the strivings or the motions of the things arise from the same cause, seeing that except God there is no cause of Motion. And so it follows that God is not only the cause of the Substance of the Soul, but also of every motion or striving of the Soul, which we call will, as you usually assert everywhere. From this statement it also necessarily seems to follow either that there is no evil in the movement or will of the Soul, or that God Himself is the immediate cause of evil. For even the things which we call evil come about through the soul, and consequently through such an immediate influence and coöperation of God. For instance, the soul of Adam wants to eat of the forbidden fruit. According to the above statement the volition of Adam occurs as the result of the influence of God, not merely in so far as he wills, but also, as we shall immediately show, in so far as he wills thus. So that the forbidden act of Adam is either no evil in itself in so far as God not only stirred his will but also in so far as He stirred it in that way, or else God Himself appears to do that which we call evil. And methinks that neither you nor Monsieur Descartes solves this difficulty by saying that evil is something unreal, in which God does not concur. For whence, then, came the will to eat, or the Devil's will to pride? For since (as you rightly remark) will is not something other than the Soul itself, but is this or that motion or striving of the Soul, it has as much need of God's coöperation in the one case as in the other. Now the coöperation of God, as I understand from your writings, is nothing else than the determination of a thing by His will in this or that manner. And so it follows that God concurs in, that is, determines, the evil will in so far as it is evil, as well as the good will. For His will, which is an absolute cause of all that is both in the substance and in the strivings, seems then also to be a first cause of the evil will, in so

far as it is evil. Moreover, in that case, there is either no determination of an evil will in us of which God did not know from eternity, or we ascribe to God an imperfection. But how does God know it except through His decrees? Therefore His decrees are the cause of our determinations, and so again it seems to follow either that a bad will is no evil, or else that God is the immediate cause of that evil. And it is not valid to apply here the Theologians' distinction about the difference between the deed and the evil adhering to the deed, for God decreed not only the action but also the manner of the action, that is, God not only decreed that Adam should eat, but also that he should necessarily eat in violation of the command, so that it again seems to follow either that Adam's eating contrary to the command was no evil or else that God Himself caused it.

Worthy Sir, this much only, for the present, of what I cannot penetrate in your Treatise; for it is hard to maintain both extremes. But I shall expect from your penetrating judgment and diligence such an answer as will give me complete satisfaction, and I hope to show you in the future under what obligation you will have put me thereby. Worthy Sir, be assured that I ask this for no other reason than the desire for truth. I am disinterested, as I am a free person, not dependent on any profession, but I earn my living by honest trading, and devote my spare time to these matters. I also humbly beg you to be pleased with my difficulties; and whenever it please you to write an answer, which I shall await with a very longing heart, then please write to W. v. B., etc.

Meanwhile I shall be and remain, Sir,
Your devoted servant
WILLIAM VAN BLYENBERGH.

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Dordrecht, 12 December 1664.

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LETTER XIX

B. D. S.

To the Very Learned and Prudent Mr. WILLIAM VAN BLYENBERGH.

Reply to the Preceding.

SIR AND VERY WELCOME FRIEND,

Your letter of the 12th December, enclosed in another of the 21st December, I only received on the 26th of the same month, while I was at Schiedam. I gathered from them your great love of truth, and that it alone is the aim of all your endeavours. This made me, who also have nothing else in view, decide not only fully to grant your request, namely, that I should be willing to answer, according to my understanding, the questions which you send me now or will send me in the future, but also on my side to do all that can promote our closer acquaintance and sincere friendship. For, of all the things which are beyond my power nothing is more esteemed by me than to be allowed to have the honour of entering into the bonds of friendship with people who sincerely love truth. For I believe that of the things beyond our power, there is nothing in the world which we can love with tranquillity except such men. For it is as impossible to dissolve the love which such bear one another, since it is founded on the love which each has for the knowledge of truth, as it is to refuse to embrace the truth once it has been grasped. Moreover, it is the greatest and most pleasant which can be found among things which are not within our power; since nothing but truth can unite together different views and dispositions. I pass over the very great advantages which follow from it, that I may not detain you longer with things which no doubt you know yourself. I have done so thus far in order the better to show you how pleasant it is to me, and will be

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in future, to be allowed to have an opportunity of being able to show my ready service.

And, in order to seize the present opportunity, I will agree to answer your question which turns on this point, namely, that it seems clearly to follow from God's Providence, which is the same as His will, as well as from God's coöperation and the perpetual creation of things, either that there are no sins and no evil, or that God causes the sins and the evil. But you do not explain what you mean by evil: and, as far as I can see from the example of Adam's determined will, you seem to mean by evil the will itself in so far as it is conceived to be so determined, or to be such as to be opposed to the command of God; and therefore (as I should also admit, if that were so) there seems a great absurdity in asserting either of these two, namely, that God Himself brings to pass things opposed to His will, or that they are good although opposed to God's will. But I for my part cannot admit that sins and evil are something positive, much less that anything can exist or come to pass against the will of God. On the contrary, I say that not only is sin not something positive, but also that only improperly and when speaking in human fashion can we say that we sin against God, just as when we say that men make God angry.

For, as to the first point, we know well that everything that is, considered in itself and without regard to anything else, includes perfection, which always extends in each thing as far as does the essence of the thing itself. For it is indeed nothing different. I also take, for example, the resolution or the determined will of Adam to eat of the forbidden fruit; this resolution or determined will, considered in itself, includes as much perfection as it expresses essence. This we may understand from the fact that we cannot conceive imperfection in things unless we consider other things which have more essence. And therefore we shall be able to find

no imperfection in the decision of Adam when we consider it in itself, and do not compare it with other things which are more perfect, or show a more perfect state. Yes, one can compare it with countless other things which in comparison with it are much more imperfect, such as stones, logs of wood, etc., and this everyone also admits in fact, for everyone observes with admiration and delight in animals the very things which he detests and regards with aversion in men. For example, the wars of bees, the jealousy of doves, etc., things which we detest in men and for which we nevertheless consider animals more perfect. This being so, it clearly follows that sins, seeing that they signify nothing but imperfection, cannot consist in anything which expresses essence, like the decision of Adam or the execution thereof.

Moreover, we also cannot say that the will of Adam opposed the will of God, and that it was evil because it displeased God. For besides the fact that it would argue a great imperfection in God if something were to happen against His will and if He were to desire something which He could not obtain, and if His nature were so determined that, like His creatures, He would have sympathy with some things and antipathy toward others, it would also be entirely opposed to the nature of God's will. For since this is not something different from His understanding, it is as impossible for anything to happen contrary to His will as it is for it to happen contrary to His understanding, that is, whatever should happen contrary to His will, would have to be by nature such as to be contrary to the understanding, like a square circle. Since, then, the will or the decision of Adam, considered in itself, was not evil, nor, properly speaking, against the will of God, so it follows that God can be, or rather, according to the argument which you mention, must be its cause, not indeed in so far as it was evil, for the evil in it was no more than a privation of a more perfect state, which Adam had to lose through that action. It is certain that Privation is not something positive, and that the term is only used in relation to our understanding, and not in relation to God's understanding. This comes about thus, namely, because we express by one and the same definition all individuals of the same kind, for example, all who have the external shape of men, and therefore we consider that they are all equally capable of the highest perfection which we can deduce from such a Definition, and when we find one whose deeds are incompatible with that perfection, then we consider that he is deprived thereof and that he deviates from his nature. This we should not do, had we not brought him under such a definition, and attributed to him such a nature. But since God neither conceives things abstractly nor makes such general definitions, and no more essence belongs to things than the Divine Understanding and power imparts to them and actually gives them, it clearly follows that one can only speak of this privation in relation to our understanding, but not in relation to God.

Herewith, methinks, the question is completely answered. But in order to make the path smooth and to remove every obstacle, I must still answer the following two questions, namely, first, why Scripture says that God desires the wicked to repent, and also why He forbade Adam to eat of the tree, when He had ordained the contrary; secondly, what seems to follow from what I have said, that the ungodly by their pride, avarice, desperation, etc., serve God as well as do the pious by their generosity, patience, love, etc., because they also carry out the will of God.

However, in answer to the first question I say that Scripture, since it especially serves the common people, continually speaks in human fashion, for the people are not capable of understanding high matters. And therefore, I believe that

all those things which God revealed to the Prophets as necessary to salvation, are written in the form of laws, and so the Prophets composed a whole Parable, namely, first they described God as a King and Lawgiver because He revealed the means of salvation and of perdition, of which He was the cause. The means, which are no more than causes, they then called Laws, and wrote them down in the form of Laws. Salvation and perdition, which are no more than the effects which necessarily follow from these means, they represented as reward and punishment. And they adapted all their words to this parable rather than to the truth. And everywhere they described God as a man, now angry, now merciful, now desiring the future, now seized by jealousy and suspicion, and even deceived by the Devil. So that Philosophers, and with them all those who are above the Law, that is, who follow virtue not as a Law but from love of it because it is the best thing, need not trouble about such words.

The prohibition to Adam, then, consisted solely in this, namely that God revealed to Adam that the eating of the fruit of the tree brought death, just as He reveals also to us through our natural understanding that poison is deadly. But if you ask to what end He revealed this to him, I answer, in order to make him thus much more perfect in knowledge. Therefore to ask God why He did not give him also a more perfect will, is just as absurd as to ask why He did not give to the circle all the properties of a sphere. This follows clearly from what was said above, and I have proved it also in the Scholium to Proposition 15 of the First Part [of the Principles of Descartes proved geometrically].

With regard to the second difficulty, it is indeed true that the ungodly express the will of God according to their measure, but they are not therefore to be in any way compared to the pious. For the more perfection anything has, the more does it participate also in Deity, and the more does it express the perfection of God. Therefore since the pious have incalculably more perfection than the ungodly, their virtue cannot be compared with that of the ungodly because the ungodly lack the love of God which springs from the knowledge of Him, and whereby alone we, according to our human understanding, are said to be the servants of God. Indeed, since they know not God, they are no more than a tool in the hand of the master which serves unconsciously, and perishes in the service; on the other hand, the pious serve consciously, and become more perfect by their service.

This, Sir, is all that I can now submit in answer to your question. I wish nothing more than that it may satisfy you. But if you still find difficulty, then I beg you to let me know, in order to see if I can remove it. You on your side need not have any scruples, but as long as you do not consider yourself satisfied, I would like nothing better than to know the reasons thereof, so that truth may dawn at last. I do indeed wish that I might write in the language in which I was brought up. I might possibly express my thoughts better. But please take it in good part, and yourself correct the mistakes, and consider me

Your devoted Friend and servant

B. DE SPINOZA.

THE LONG ORCHARD, 5 January 1665.

I shall stay in this Orchard another three or four weeks, and then I propose to return to Voorburg. I believe that I shall receive an answer from you before this time is up. If your business affairs do not permit of it, then please write to Voorburg with this address, To be delivered in the Church lane at the house of Mr. Daniel Tydeman, painter.

LETTER XX WILLIAM VAN BLYENBERGH

TO THE VERY ILLUSTRIOUS MR. B. D. S.

Reply to the Preceding.

SIR AND WORTHY FRIEND,

When first I received your letter and read it through hurriedly I not only meant to reply immediately but also to repudiate many things. But the more I read it, the less I found matter for objection therein. And great as was my longing to see it, so great was the

pleasure I derived from reading it.

But before I proceed to make the request that you would solve some more difficulties for me, it is necessary that it should be known that I have two General Rules in accordance with which I always endeavour to philosophize. One is the clear and distinct apprehension of my understanding, the other is the revealed Word or the will of God. In accordance with the one I endeavour to be a lover of the truth, but in accordance with both I endeavour to be a Christian Philosopher. And whenever it happens that, after long consideration, my natural knowledge either seems to conflict with this Word, or cannot very well be made to harmonize with it, then this Word has so much authority with me that I rather suspect the conceptions which I imagine to be clear, than place them above, and in opposition to, that truth which I think I find prescribed for me in that book. And what wonder, since I want steadfastly to continue to believe that that Word is the Word of God, that is, that it has come forth from the highest and most perfect God, who possesses more perfections than I can grasp, who perhaps wished to declare more perfections of Himself and His works than I with my finite understanding can grasp to-day. I say can grasp to-day, for it may be that I am by my own doing deprived of greater perfections, and

so if, perchance, I had the perfection whereof I am deprived through my own doing, I should be able to understand that all that is stated and taught us in that Word agrees also with the soundest conceptions of my Mind. But since I now suspect myself of having, by my continual error, deprived myself of a better state, and since, as you assert in [your Principles], Part I, Proposition 15, our knowledge even when most clear, still contains imperfection, I rather turn towards that Word, even without a reason, merely on the ground that it has proceeded from the most perfect Being (this I take for granted now, because the proof of it is not in place here or would take too long) and therefore must be accepted by me. If, now, I were to judge of your letter only under the guidance of my first rule to the exclusion of the second, as though I had it not, or it did not exist, I should be obliged to admit very many things, as I also do, and I should admire your lucid conceptions, but my second rule compels me to differ from you more widely. However, within the limits of a letter I shall examine them somewhat more extensively under the guidance of one or of the other.

First, in accordance with the first stated rule, I had asked: since, following your assertions, creation and preservation are one and the same thing, and God makes not things only, but also the motions and modes of things, to continue in their own state, that is, concurs in them, does it not seem to follow that there is no evil or that God Himself causes evil? I relied on this rule, that nothing can happen against the will of God, since otherwise it would involve an imperfection, or the things which God brings to pass (among which there appear also to be included the things which we call evil) must also be evil. But since this too involves a contradiction, and however I turned it I could not free myself from the contradiction, I had recourse to you who should be

the best interpreter of your own conceptions. You say in your reply that you persist in your first presupposition, namely, that nothing happens or can happen against the will of God. But when an answer has to be given to the problem whether God, then, does not do evil you say that sin is not something positive, and also that we cannot except very improperly be said to sin against God, and in the Appendix, Part I, Chapter VI, you say that there is no absolute evil as is self-evident: for whatever exists, considered in itself, without reference to another thing, includes perfection which in each thing extends as far as does the essence of that thing itself, and therefore it clearly follows that sins, which denote no more than imperfections, cannot consist in anything which expresses essence. If sin, evil, error, or whatever name one may be pleased to give it, is nothing but the loss or privation of a more perfect state, then by all means it seems to follow that to exist is not an evil or an imperfection, but that evil can arise in something existing. For that which is perfect cannot be deprived of a more perfect state by an equally perfect action, but only by the fact that we turn to something imperfect, because we do not make the best use of the powers given to us. This you seem to call no evil but merely a lesser good, because things considered in themselves include perfection. Secondly, because, as you say, no more essence belongs to things than the divine understanding and power assigns and actually gives to them: therefore they cannot show more reality in their actions than they have received essence. For if I can render neither greater nor less results than I have received essence, it is impossible to think of a privation of a more perfect state; for if nothing happens against the will of God, and if only so much comes to pass as there is essence for, then in what conceivable way can there be evil, which you call privation of a better state? How can anyone suffer the loss of a more perfect state through an action so constituted and dependent?

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Therefore, methinks, you cannot but assert one of two things, either that there is something evil, or, if there is no evil, that there can be no privation of a better state. For it seems to me to be contradictory that there should be no evil and yet that there should be a privation of a better state.

But you will say, through the privation of a more perfect state we relapse into a lesser good, but not into an absolute evil. But (Appendix, Part I, Chapter 3) you have taught me that one must not quarrel over words. Therefore I do not dispute now whether it may be called an absolute evil or not; but only whether the fall from a better to a worse state is not what is called by us and may also be rightly called, a more evil state, or a state which is evil. But should you say that this evil state still contains much good, I ask whether the man cannot be called evil who by his careless action has brought about the privation of his more perfect state, and is consequently now less than he was before.

But in order to escape these foregoing arguments, since you still seem to have some difficulties with this matter, you say that evil indeed exists and that evil did indeed exist in Adam, but that it is not something positive, and is only called such with respect to our understanding and not with respect to God's understanding, and that with respect to our understanding it is Privation (but only in so far as we deprive ourselves of the best liberty, which concerns our nature, and is in our power) but that with respect to God it is Negation. But now let us examine here whether what you call evil, if it is evil only in relation to us, would not be evil: and next whether evil, regarded as what you assert it to be, must be called mere Negation with respect to God.

I seem to a certain extent to have answered the first question above: and even though I admitted that my being less perfect than another being cannot posit any evil in me, because I cannot demand a better state from

my creator, and it makes me only different in degree, yet I cannot but admit that if I am less perfect now than I was in the past, and have brought about my imperfection by my own fault, I must then confess that I am so much worse. I mean if I consider myself as I was before ever I fell into imperfection, and compare myself with others who have greater perfection than I have, then this lesser perfection is no evil, but a good of a lower grade. But if I compare myself as I am after I have fallen from a more perfect state, and when deprived of it through my own carelessness, with my former nature with which I issued from my creator's hand, and was more perfect, then I must consider myself to be worse than before; for it is not the creator but I myself who have brought myself to this, for I had, as you too admit, the power of keeping myself from error.

As to the second point, namely whether evil, which, as you assert, consists in the privation of a better state which not only Adam but also we all have lost by a too hasty and disorderly action, whether this evil is simply Negation in relation to God. But in order to examine this point thoroughly, we must see how you regard man and make him dependent on God before he fell into error, and how the same man is regarded after this error. Before the error you describe him as one to whom no more perfection pertains than the Divine understanding and power imparts and in fact gives him, that is, (unless I mistake your meaning) that man can show no more and no less perfection than God has put essence into him, and this makes man depend on God in the same way as the Elements, stones, plants, etc. But if this is your opinion, then I cannot understand the remark in the Principles, Part I, Proposition 15: But since the will is free to determine itself, it follows that we have the power of restraining the faculty of assent within the limits of our understanding, and hence of acting so that we do

not fall into error. Does it not seem a contradiction to make the will so free that it can keep itself from error, and at the same time to make it so dependent on God that it cannot show either more or less perfection than God has given it essence?

As to the other point, namely, how you regard man after his error, on this you say that man by a too hasty action, namely, by not restraining his will within the limits of his understanding, deprives himself of a more perfect state. But it seems to me that both here and also in the Principles you should have shown somewhat more fully the two extremes of this Privation, what he possessed before the privation, and how much he retained after the loss of this perfect state (as you call it). Something is indeed said about what we have lost but not about what we have retained. Principles, Part I, Proposition 15: Therefore the whole imperfection of error consists simply in the privation of the best liberty, and this is called error. Let us, however, examine these two remarks, just as they have been asserted by you. You will have it not only that there are in us such different modes of thinking, some of which we call willing and others understanding, but also that there exists between them such an order that we ought not to will things before we have clearly understood them, and if we always keep our will within the limits of our understanding we shall never err, and lastly that it is in our power to be able to keep our will within the limits of our understanding. When I consider this earnestly, surely one of two things must be true: either all this that has been asserted is mere fancy, or God has impressed on us this very order. But if God has imprinted in us this very order, would it not be beside the mark to say that this has been done without any purpose, and that God does not desire that we should observe and follow this order? For that

would posit a contradiction in God. And, if we must observe the order implanted in us, how can we be and remain so dependent on God? For if no one shows either more or less perfection than he has received essence, and if these forces must become known from their effects, then he who lets his will go beyond the limits of his understanding has not received so much power from God, otherwise he also would have exercised it, and consequently he who errs could not have received from God the perfection of not erring, or he would never err, for according to your assertion there is always given as much essence as there is exercised perfection.

Secondly, if God has given us so much essence that we can maintain this order, as you say we can maintain it; and if we always produce as much perfection as we have essence, how does it come about that we transgress this order, how comes it that we can transgress it, and that we do not always restrain our will within the limits of our understanding?

Thirdly, if I am so dependent on God, as I have above shown you to assert, that I can control my will neither within nor without the limits of my understanding, unless God has previously given me just sufficient essence, and has by His will pre-determined one or the other, if we look into this more closely, how can the freedom of the will avail me at all? Indeed does it not seem to argue a contradiction in God to give an order that we should keep our will within the limits of our understanding, and not to give us so much essence or perfection that we may be able to carry it out? And if, according to your assertion, He had given us so much perfection, surely we should never be able to err: for we must produce as much perfection as we have essence, and must always show in our works the power that was given us. But our errors are a proof that we have no such power that is so dependent on God (as you will

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have it). So that one of these alternatives must be true, either we are not so dependent on God, or we have not in ourselves the power of being able not to err. But, according to your assertion, we have the power of not erring. Therefore we cannot be so dependent.

From these remarks I think it is now clear that it is impossible that evil, or the being deprived of a better state, should be negation in relation to God. For what is meant by privation, or the loss of a more perfect state? Is it not a transition from a greater to a lesser perfection, and consequently from a greater to a lesser essence, and being placed by God in a certain degree of perfection and essence? Is not that to will that we cannot attain to another state without His perfect knowledge unless He had resolved and willed otherwise? Is it really possible that this creature, the creature brought forth by that omniscient and perfect Being, who wished it to retain such a state of essence, indeed a creature with which God is continually concurring in order to preserve it in that state of being, is it possible that it should decline in essence, that is be diminished in perfection, without the knowledge of God? This seems to me to involve an absurdity. Is it not absurd to say that Adam lost a more perfect state, and consequently was incapable of carrying out the order which God had placed in his soul, and that God had no knowledge of that loss and of the imperfection and to what extent and how much perfection Adam had lost? Is it really conceivable that God should constitute a being that should be so dependent that it could produce only such action and that then it should through that action lose a more perfect state (to say nothing of His being alleged to be an absolute cause thereof) and that God should have no knowledge of it?

I admit that there is a difference between the action and the evil adhering to the action; but I cannot

understand your remark But evil in relation to God is Negation. That God should know the action, determine it, and concur in it, and yet have no cognizance of the evil which is in the action, nor know what the outcome of it would be, all this seems to me to be impossible in the case of God. For observe with me that He concurs in my act of begetting children by my wife, for that is something positive, and consequently God has clear knowledge of it; but in so far as I misuse this action with another woman contrary to my promise and vow there is evil concurrently with this action. Now what is there in this which is negative in relation to God? Not the fact that I perform an act of procreation, for God concurs in this in so far as it is positive. The evil, then, which occurs with the action must consist only in the fact that I do it contrary to my own vow, or else the command of God, with such a woman as I ought not to have intercourse with. But now is it conceivable that God should know our actions, that He should concur in our actions, and yet not know with whom we commit the actions, the more so because God also concurs in the action of the woman with whom I had to do. Methinks it is difficult to believe this of God. Consider the act of killing. In so far as it is a positive act, God concurs in it. But according to you He is ignorant of the effect of the action, namely the destruction of a being and the dissolution of God's creature. As if God did not know His own work. (I fear that I cannot well understand your meaning here, for your conceptions seem to me too penetrating for you to commit such a gross error.) But perhaps, you will reply here that the actions, such as I represented them, are all quite good and that no evil accompanies them. But then I cannot understand what it is that you call evil, which follows the privation of a more perfect state. Moreover, the whole world would then be put in lasting confusion,

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and we human beings should be made like unto the beasts. See now what profit such a view would bring to the world.

You also reject the common description of man, but ascribe to each man as much perfection of action as God in fact gives him to exercise. But this I can only take to mean that the ungodly serve God by their action just as well as the godly do. Why? Because neither can produce works more perfect than the amount of essence that has been given to each of them, and which they show through their works. And I do not think that you answer this question satisfactorily in your second answer when you say the more perfection a thing has, the more it has of Deity, and the more it expresses the perfection of God. Therefore, since the pious have incalculably more perfection than the ungodly, their virtue cannot be compared with that of the ungodly. For these are as a tool in the hand of the master which serves unconsciously, and perishes in the service; but the pious on the contrary serve consciously [and become more perfect by their service].* Of both, however, it is true that they cannot do more, for as much more perfection as these produce beyond the others, so much more essence have they received beyond the others. Do not the ungodly, then, with their little perfection, serve God as much as the godly? For according to your assertion, God wants no more from the ungodly, otherwise He would have given them more essence. But He did not give them more essence, as appears from their works. Therefore He wants no more from them. And if each after his kind does what God wants, no more and no less, why should he who does less, but still does just as much as God desires from him, not please God as much as the godly does?

Moreover as we, according to your assertion, lose a more perfect state through the evil which by our

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^{*} The Dutch original misquotes: "and perish in the service." Corrected in the Latin version.

carelessness accompanies the act, so here also you seem to want to state that, by keeping our will within the limits of our understanding, we not only remain as perfect as we are, but that we even become more perfect from our service. This seems to me to involve a contradiction if while we are alleged to be so dependent on God that we can produce neither more nor less perfection than we have received essence, that is, than God has willed, we should yet be able to become either worse, by our carelessness, or better, by our prudence. So I can only suppose that if man is such as you describe him, the ungodly by their actions serve God as much as do the godly by their actions, and so we are made as dependent on God as the elements, plants and stones, etc. Of what use, then, is our understanding? Of what use our power of keeping our will within the limits of our understanding? Why is this order impressed upon us?

And see too, on the other side, of what we deprive ourselves, namely anxious and earnest considerations to make ourselves perfect according to the law of God's perfection, and according to the order which He has impressed on us to make ourselves perfect. We deprive ourselves of prayer and sighing to God, from which we have so often felt that we derive an extraordinary increase of strength. We deprive ourselves of all religion, and of all the hopes and all the joys which we expect from

prayers and religion.

For, surely, if God has no knowledge of evil, it is still less credible that He should punish evil. What reasons are there, then, why I should not eagerly commit all villainies (if only I can escape the condemnation of the judge)? Why not enrich myself by horrible means? Why not do whatever pleases us indiscriminately, and whatever the flesh prompts us to do? But you will say, because we must love virtue for its own sake. But how can I love virtue? I have not been endowed with so

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much essence and perfection. And if I can derive as much pleasure from the one as from the other why should I make the exertion to keep my will within the limits of my understanding? Why not do whatever my passions lead me to? Why not secretly kill the man who is in my way in anything? etc. See what an opportunity we give to all the ungodly and to ungodliness. We make ourselves like logs of wood and all our doings just like the movements of a clock.

From what has been said it seems to me very difficult to allege that we can only improperly be said to sin against God. For otherwise of what significance is the power given us of being able to keep our will within the limits of our understanding by exceeding which we sin against the command? But you will probably say that this is no sin against God but only concerns ourselves; for if we were properly to be said to sin against God then it would also have to be said that something happens against God's will. But that, according to your opinion, is impossible, therefore also sin. But anyway one of two things must be true, either God wills it, or does not will it. If God wills it, how can it be evil in relation to us? And if He does not will it, then, according to your opinion, it should not come to pass. But although this, according to your opinion, involves some absurdity, yet it seems to me very dangerous to admit therefore the absurdities mentioned above. Who knows whether, if we bestow much thought, some expedient might not be found by us to reconcile these matters to some extent?

With this I will conclude my examination of your letter under the guidance of my first general rule. But before I proceed to examine it in accordance with my second rule, I will state two things which concern this thought of your letter. Both are stated by you in your *Principia*, Part I, Proposition 15. The first is your

assertion that we can keep our power of willing and of judging within the limits of our understanding. To this I cannot yet assent absolutely. For if this were true, surely we should be able to find one man, out of the countless many, who would show by results that he had this power. Yet every one can find very clearly from his own experience that, however much strength he may exert, he cannot reach that goal. And if anyone has a doubt about it let him examine himself and see how often in spite of his understanding his passions overcome his Reason, even when he exerts his utmost strength. But you will say, the reason why we do not achieve it is not that it is beyond our power, but that we do not apply sufficient diligence. I reply to this that if it were possible, surely one would be found out of so many thousands. But of all men there has not been, nor is there, one who would dare to boast that he has not fallen into error. And what surer proof can we adduce for these things than examples? If there were a few at least, that would be one [proof], but now there is not one, and so there is no proof. But you will be able to make objection and say: If it is possible that I, by suspending my judgment and keeping my will within the limits of my understanding, can once bring it to pass that I do not err, why should I not always be able to realize this effect when I exercise the same diligence? I reply that I cannot see that we have to-day as much strength as to be able always to continue to do so. Once, by exerting all my strength, I can walk two miles in one hour, but I cannot do that always. So I can for once, by great exertion, refrain from error, but I have not sufficient strength to be able to do so always. It seems clear to me that the first man as he issued from the hand of that perfect master worker had these powers, but that (and in this I agree with you) either by not making sufficient use of this power or by misusing it, he lost the perfect

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state of being able to do what was before then quite in his power. This I could confirm with many arguments, did I not fear to be too lengthy. And herein I think lies the whole essence of Holy Scripture, and therefore we must hold it in great respect, since it teaches us what is so clearly confirmed by our natural understanding, namely, that our fall from our first perfection came about and was caused by our carelessness. What is there more necessary than to remedy this fall as much as possible? And it is the sole aim of Holy Scripture to bring fallen man back to God.

The second point concerns *Principles*, Part I, Proposition 15, which asserts that to understand things clearly and distinctly is opposed to the nature of man. From this you conclude finally that it is much better to give our assent to things even though they are confused, and to exercise our freedom than to remain indifferent always, that is, on the lowest rung of freedom. I do not find this clear enough for me to assent to it. For a suspension of our judgment preserves us in the state in which we were created by the creator, but to assent to what is confused is to assent to what we do not understand, and, when we do this, it is as easy to assent to the false as to the true. And if (as Monsieur Descartes somewhere teaches us) we do not, when assenting, comply with the order which God has given concerning our understanding and our will, namely, that we should only assent to what we clearly understand, then even if we sometimes by chance discover the truth, yet we are sinning since we do not embrace the truth according to that order with which God willed that we should embrace it. Consequently just as the withholding of an assent preserves us in that state in which God has put us, so confused assent puts us in a worse condition than we are. For it lays the foundation of errors through which we then lose our perfect state. But I hear you say, is it not better to make our-

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selves more perfect by assenting to things even when confused rather than, by not assenting, to remain always on the lowest rung of perfection and freedom? But, apart from the fact that we have denied this, and have to some extent shown that we have made ourselves not better but worse, it also seems to us impossible and a contradiction that God should extend the knowledge of things determined by Him further than the knowledge which He has given us, indeed, that God should include an absolute cause of our errors. This is not inconsistent with the fact that we cannot complain against God that He should grant us more than He has granted, since He was not bound to do so. It is indeed true that God was not bound to give us more than He has given us, but God's supreme perfection also posits that a creature proceeding from Him should involve no contradiction, such as would otherwise appear to follow. For nowhere in created Nature do we find knowledge except in our own understanding. To what other end could this have been given us but that we might contemplate and know the works of God? And what then seems also to follow more evidently than that there must be agreement between the things which must be known and our understanding?

But if I should examine your letter under the guidance of my second general rule, then we should have to differ more than we do under the guidance of the first. For I think (please inform me if I am wrong) that you do not ascribe to the Holy Scriptures that infallible truth and divinity which I believe exist therein. It is true that you say you believe that God has revealed the things of Holy Scripture to the Prophets, but in such an imperfect manner that, if it happened as you state, it would imply a contradiction in God. For if God has revealed His Word and His will to men, then He has revealed it to them for a definite purpose, and clearly. If, now,

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the Prophets have composed a Parable out of that Word which they have received, then God must either have willed that also, or He did not will it. If God did will that they should compose a Parable from His Word, that is, that they should stray from His meaning, then God was the cause of the error, and then God willed something self-contradictory. If God did not will it, then it is impossible that the Prophets should have been able to compose a Parable therefrom. Moreover, it seems credible, if we suppose that God communicated his Word to the Prophets, that He communicated it to them in such a way that they should not err in receiving it. For God must have had a definite purpose in communicating His Word, but God's purpose could not have been to lead men into error thereby, for that would be a contradiction in God. Also man could not err contrary to the will of God, for this, according to your opinion, is impossible. In addition to all this, one cannot believe of this most perfect God that He should permit a meaning other than He wished to be given by the Prophet to His Word communicated to the Prophets in order they should explain it to the common people. For if we state that God has communicated His Word to the Prophets, we state also that God appeared to the Prophets, or spoke with them, in some extraordinary manner. If, now, the Prophets make a Parable of this communicated Word, that is, give it a sense other than God wished them to give it, then God would certainly have told them so. Also it is as impossible with respect to the Prophets, as it is a contradiction with respect to God, to hold that the Prophets could have understood something different from what God had willed that they should understand.

I see also very little proof that God has revealed His Word as you state, namely, that He revealed only salvation and perdition, and appointed sure means to that end,

and that salvation and perdition are no more than the effects of the appointed means. For, surely, if the Prophets had received the Word of God in this sense what reasons could they have had for giving it another meaning? But I do not see you produce a single proof capable of convincing us that these views should be set above the views of the Prophets. But if you think that the proof consists in this, that otherwise this Word would include many imperfections and contradictions, then I say that this is merely an assertion and not a proof. And who knows, if both meanings were examined, which would contain the fewer imperfections? Lastly, the supremely perfect Being knew well what the common people could understand, and consequently what was the best method by which the common people must be taught.

As to the second part of your first question, you ask yourself why God forbade Adam to eat of the fruit of the tree when He had nevertheless ordained the contrary, and you answer that the prohibition addressed to Adam consisted solely in this, namely, that God revealed to Adam that the eating of the fruit of this tree caused death just as He reveals to us through our natural understanding that poison is deadly for us. If it is established that God forbade something to Adam, what reasons are there to compel me to place more belief in the account of the manner of the prohibition stated by you than in that stated by the Prophets to whom God Himself revealed the manner of the prohibition? You will say: My manner of prohibition is more natural, and therefore more like the truth, and more becoming to God. But I deny all this. Nor do I conceive that God has revealed to us through our natural understanding that poison is deadly; and I see no reason whereby I should know that anything is poisonous, if I had seen no evil effects of poison in the case of others, or heard of them. Daily experience teaches us how many men, because they do

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not know poison, eat it unwittingly and die. But you will say, if people knew that it was poison they would know that it is evil. But I answer that no one knows poison, or can know it, unless he has seen and heard that someone has hurt himself by using it. And if we suppose that up to this day we have never heard or seen that anyone has been hurt by the use of this kind of thing, we should not only not know it now, but we should fearlessly use it to our hurt. Suchlike truths are taught us every day.

What can give greater delight to an upright intellect in this life than the contemplation of the perfect Deity? For, just as it is concerned with the most perfect, so it must also include the most perfect that can come to our finite understanding. And, indeed, I have nothing in my life for which I would exchange this pleasure. In this I can pass much time with heavenly joy; but all at once I can be also sad at heart, when I realize that my finite understanding is wanting in so much. This sorrow, however, I comfort with the hope which I have, and which is dearer to me than life, that I shall exist again and continue to exist, and shall contemplate this Deity more perfectly than I do to-day.

When I consider this brief and fleeting life, in which I expect my death any moment, if I were bound to believe that I should cease to be, and that I should be cut off from this holy and glorious contemplation, I should certainly be much more miserable than all creatures who have no knowledge that they will come to an end. For then, before my death, the fear of death would make me unhappy, and after my death, I should be nothing, and I should therefore be unhappy since I should be deprived of that divine contemplation. And your opinions seem to lead me to this, that when I cease to be here, I shall also cease to be for ever. The Word and the will of God, on the contrary, give me

strength by their inner testimony in my soul that after this life I shall at some time enjoy myself in a more perfect state in the contemplation of the most perfect Deity. Surely, even if this hope should eventually be found to be false, yet it makes me happy so long as I hope. This is the only thing that I desire of God, and shall desire with prayers, sighs and earnest wishes (would that I could contribute more to it) as long as there is breath in this body, namely, that it may please Him through His Divinity to make me so fortunate that, when this body is dissolved, I may then still remain a thinking being, so that I may continue to contemplate the perfect Deity. And if only I can obtain this, it is a matter of indifference to me what people here believe, of what views people persuade each other here, whether there is anything that is founded on the natural understanding and can be grasped, or not. This and this alone is my wish, my desire and my constant prayer, that God may confirm this certainty in my soul. And if I have this (and, oh! if I have it not, then I am the most wretched) my soul shall cry out with longing, As the hart panteth after the water brooks, so panteth my soul after thee, O living God. Oh when will the day come that I shall be with you and behold you?* And if only I attain to this I have every aim and desire of my soul. But these hopes do not appear to me in your doctrine that our service is not pleasing to God. Nor can I grasp why God (if at least I may speak of Him in this human fashion) should bring us forth and sustain us, if He takes no pleasure in our service and our praise. But if I am mistaken about these opinions of yours I wish to have your explanation.

But I have detained myself and perhaps also you too long, and as I see that my time and paper are exhausted, I will finish. This is what I would still like to see solved

^{* [}Psalm xlii, 1, 2, misquoted.]

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in your letter. Perhaps here and there I have drawn from your letter some conclusion which perchance you do not intend, but on this I should like to hear your explanation.

I have recently occupied myself with the consideration of certain attributes of God, in which your Appendix has given me no little help, and in fact I have only paraphrased your views which seem to me to present nothing but proofs. Therefore I am very much surprised that L. Meyer says in the Preface that this does not yet give your views, but that you were bound thus to teach your pupil whom you had promised to teach the Philosophy of Descartes, but that you have a totally different opinion both about God and the soul and especially about the will of the soul. I see also that it is said in this Preface that you will shortly publish the Metaphysical Thoughts in an amplified form. Both these I long for very much, for I expect something special from them. It is not, however, my habit to praise anyone to his face.

This is written in sincere friendship, as requested in your letter, and in order that the truth may be discovered. Forgive me for writing at such length, more than I intended. If I may receive a reply to this, you will oblige me very much. As to writing in the language in which [you] were brought up, I can have no objection, if at least it is Latin or French; but I beg to be allowed to receive this answer still in this same language as I have understood your meaning in it quite well, and maybe I should not understand so clearly in Latin. By doing so, you will lay me under such an obligation that I shall be and remain,

Sir, your most devoted and dutiful WILLIAM VAN BLYENBERGH.

DORDRECHT, 16 Jan. 1665.

I should like to be informed more fully in your reply what you really mean by a Negation in God.

LETTER XXI

B. D. S.

To the Very Learned and Eminent Mr. WILLIAM VAN BLYENBERGH.

Reply to the Preceding.

SIR AND FRIEND,

When I read your first letter I believed that our opinions almost coincided; but I understand from your second letter, which was delivered to me on the 21st of this month, that this is far from being so. I can see that we differ not only about the conclusions which may be ultimately derived from first principles, but also about those principles themselves. So much so that I hardly believe that our correspondence can be for our mutual instruction. For I perceive that no proof, however sound according to the Laws of Proof, avails with you, unless it agrees with that explanation which you, or other Theologians known to you, give to Holy Scripture. But if you hold that God speaks more clearly and effectively through Holy Scripture than through the light of the natural understanding, which He also gave us, and in His Divine Wisdom continually preserves firm and uncorrupted, you have strong reasons for moulding your understanding to the opinions which you attribute to Holy Scripture. I myself could not do otherwise. But as far as I am concerned, since I openly and unambiguously confess that I do not understand Holy Scripture although I have spent some years in the study of it, and since it has not escaped my notice that when I have a strong proof no such thoughts can occur to me that I can ever entertain any doubt about it, I acquiesce wholly in that which my understanding shows me, without any suspicion that I may be deceived, or that Holy Scripture, although I do not search it, can contradict it: for truth does not

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conflict with truth, as I have already clearly shown before in my Appendix (I cannot indicate the chapter, for I have not the book here with me in the country). Even if I were once to find untrue the fruits of my natural understanding, they would make me happy, since I enjoy them, and I endeavour to pass my life not in sorrow and sighing but in peace, joy and cheerfulness, and thereby I ascend a step higher. Meanwhile I know (and this gives me the greatest satisfaction and peace of mind) that all things come to pass as they do by the power of the most perfect Being, and His immutable decree.

But to return to your letter. I sincerely express my best thanks to you for having laid bare to me in time your method of philosophizing. But I give you no thanks for attributing to me such opinions as you wish to deduce from my letter. What material, I pray, did my letter provide for imputing to me these opinions, namely, that men are like unto beasts, that men die and perish after the manner of beasts, that our works are displeasing to God, etc.? (It may be that we differ entirely on this last point, since I cannot but think that you conceive God as taking pleasure in our works as one who has achieved His end, inasmuch as something has succeeded according to His wish.) As far as I am concerned, I have assuredly said clearly that the upright serve God, and by their continual service they become more perfect, and love God. Is this to make them like beasts, or to declare that they perish like beasts, or, lastly, that their works do not please God?

If you had read my letter with greater attention, you would have clearly perceived that our difference lay in this alone, namely, whether the perfections which the upright receive, are conferred upon them by God as God, that is, absolutely, without our attributing to Him any human attributes (as I understand), or whether

they are conferred on them by Him as a judge, which last is what you assert. Therefore you urge in defence of the wicked that they serve God as much as do the good, since they do what they can in accordance with the decree of God. But this by no means follows from my remarks: for I do not introduce God as a judge, and therefore I estimate works according to the quality of the work, and not according to the capacity of the workman, and the reward which follows the work follows on it as necessarily as it follows from the nature of a triangle that its three angles must be equal to two right angles. And this everyone will understand if he only considers that our greatest blessedness consists in love toward God, and that this love necessarily flows from the knowledge of God, which is so strongly commended to us. This can be easily proved in general if we will only pay attention to the nature of God's Decree, as I have explained in my Appendix. But I admit that all those who confuse the Divine nature with human nature are quite unable to understand this.

I had intended to end this letter here, lest I should weary you further with matters which (as is clear from the very devout addition appended at the end of your letter) serve for jest and laughter and are of no real use. But not entirely to decline your request, I will proceed further to the explanation of the words Negation and Privation, and briefly bring out what is necessary to make the meaning of my preceding letter more lucid.

I say, then, in the first place, that Privation is not an act of depriving, but only a simple and mere lack, which in itself is nothing: for it is only a thing of Reason, or a way of thinking, which we form when we compare things with each other. We say, for example, that a blind man is deprived of sight because we easily imagine him as seeing. This imagination comes about either because we compare him with others who see, or

because we compare his present state with a past state when he did see. And when we consider this man in this way, that is by comparing his nature with that of others or with a former nature of his own, we affirm that sight belongs to his nature and therefore we say that he is deprived of it. But when the decree of God and His nature are considered, we cannot say of that man any more than of a stone, that he is deprived of sight, for at that time sight pertains to that man no less inconsistently than to a stone; for to that man there pertains and belongs nothing more than the Divine understanding and will attributed to him. And therefore God is no more the cause of his not seeing than of the stone's not seeing, which is mere Negation. So also when we consider the nature of the man who is led by his desire for pleasure, and when we compare his present desire with that which is felt by the upright, or with that which he himself had on another occasion, we assert that the man is deprived of a better desire, because we judge that the desire of virtue then pertains to him. This we cannot do if we consider the nature of God's decree and His understanding. For in this respect the better desire belongs no more to that man's nature at that time than it does to the Nature of a Devil or of a stone, and therefore in this respect the better desire is not Privation but Negation. So that Privation is nothing else than denying of a thing something which we judge to pertain to its nature, and Negation is nothing else than denying something of a thing because it does not belong to its nature. Hence it is clear why the desire of Adam for earthly things was evil only in relation to our understanding and not in relation to that of God. For although God knew both the past and the present state of Adam He did not therefore conceive Adam as deprived of a past state, that is, conceive the past state as pertaining to his nature. For then God would conceive something contrary to His will, that is, contrary to His own understanding.

If you had rightly perceived this, and also that I do not admit that liberty which Descartes ascribes to the Mind, as L. M., in my name, testified in the Preface, you would not find even the smallest contradiction in my words. But I see that I should have done much better if, in my first letter, I had replied in the words of Descartes, saying that we cannot know how our liberty, and whatever depends on it, agrees with the foresight and freedom of God (as I have done in various places in the Appendix to Descartes' Principia) so that we can find in the creation by God nothing inconsistent with our liberty, since we are unable to understand in what way God has created things, and (what is the same thing) how He preserves them. But I thought you had read the Preface and that I should be sinning against the duty of friendship, which I offered heartily, if I did not answer according to the thought that was really in my mind. But this is of no consequence.

Since, however, I see that you have not hitherto rightly grasped the Mind of Descartes, I pray you to pay attention to these two points.

First, that neither Descartes nor I have ever said that it pertains to our nature to confine our will within the limits of our understanding, but only that God has given us a limited understanding and an unlimited will yet in such a way that we do not know to what end He has created us; moreover that an unlimited will of this kind, or a perfect will, not only makes us more perfect, but is also very necessary for us, as I will show in what follows.

Secondly, that our liberty is placed not in a certain contingency or in a certain indifference, but in the mode of assertion or denial, so that the less indifferently we affirm or deny something the more free we are. For instance, if the nature of God is known to us, then the assertion that God exists follows as necessarily from our

own nature as it follows necessarily from the nature of a triangle that its three angles are equal to two right angles. And yet we are never more free than when we assert a thing in this way. But since this necessity is nothing else than the decree of God, as I have clearly shown in my Appendix to Descartes' Principles, it may to a certain extent be understood how we do something freely, and are the cause of it, notwithstanding the fact that we do it necessarily, and according to the Decree of God. This, I say, we can understand to a certain extent, when we affirm something which we clearly and distinctly perceive; but when we assert something which we do not clearly and distinctly grasp, that is, when we suffer our will to roam beyond the limits of our understanding, then we cannot thus perceive this necessity and the Decrees of God, but only our liberty, which is always included in our will (in which respect only our actions are called good or evil). And if we then try to reconcile our liberty with God's Decree and His continual creation, we are confusing that which we clearly and distinctly understand with that which we do not perceive, and therefore our effort is vain. It is enough for us, therefore, that we know that we are free, and that we can be thus free, notwithstanding the decree of God, and that we are the cause of evil, because no action can be called evil except only in relation to our freedom. So much, then, with regard to Descartes, so that I might show that his words in this connection contain no contradiction.

I will now turn to what concerns myself, and first I will briefly call to mind the advantage which comes from my opinion, and which especially consists in this, namely, that our understanding offers Mind and Body to God without any superstition. I do not deny that prayers are very useful to us: for my understanding is

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too small to determine all the means which God has to lead men to the love of Him, that is, to salvation. So far is my opinion from being harmful that, on the contrary, for those who are not prepossessed by prejudices and childish superstition, it is the sole means of attaining to the highest degree of blessedness.

As to what you say, that I make men so dependent on God that I make them like the elements, plants and stones, this shows sufficiently that you most perversely misunderstand my opinion, and confuse things which concern the understanding with imagination. For if you had grasped with your pure understanding what dependence upon God is, you would certainly not think that things in so far as they depend on God, are dead, corporeal and imperfect (who ever dared to speak in so vile a fashion of the most perfect Being?). On the contrary, you would understand that for that reason, and in so far as they depend on God, they are perfect—so much so, that we best understand this dependence and necessary operation through God's decree when we consider not logs and plants, but the most intelligible and most perfect created things, as appears clearly from what I have said before, in the second place, about the meaning of Descartes which you should have noticed.

And I cannot refrain from saying that I am very much surprised that you say: if God did not punish crime (that is, as a judge with such a punishment as the offence itself does not bring with it: for only this is in question) what consideration could restrain me from eagerly perpetrating all sorts of crimes? Surely he who only abstains from this from fear of punishment (which I hope is not so with you) in no way acts from love, and embraces virtue as little as possible. So far as I am concerned, I avoid or endeavour to avoid crimes because they are expressly repugnant to my special

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nature, and would make me stray from the love and the knowledge of God.

Further, if you had paid a little attention to human nature and grasped the nature of the decree of God, as I explained in my Appendix, and finally, if you had known how inference should proceed before a conclusion is reached, then you would not have said so boldly that this opinion makes us like logs, etc., nor would you have imputed to me the many absurdities which you imagine.

With regard to those two points which, before you proceed to your second rule, you say that you cannot understand, I reply first that Descartes is enough to enable you to arrive at your conclusion, namely, that if you will only pay attention to your own nature you will have the experience that you can suspend your judgment. But if you say that you do not find in your own experience that we have so much power over Reason to-day that we can always continue to do so, this for Descartes would be the same as saying that we cannot see to-day that as long as we exist we shall always be thinking things, or retain the nature of a thinking thing, which surely involves a contradiction.

To your second point, I say, with Descartes, that if we could not extend our will beyond the limits of our very limited understanding, we should be most wretched. It would not be in our power to eat a piece of bread, or to move a step, or to exist. For all things are uncertain and full of dangers.

I pass on now to your second Rule, and I assert that I do indeed believe that I do not attribute to Scripture that Truth which you believe to be therein, and yet I believe that I ascribe to it as much, if not more, authority, and that, far more cautiously than others, I take care not to impute to it certain childish and absurd views; and this no one can do better unless he

understands Philosophy well, or has Divine revelations. So the explanations of Scripture which ordinary Theologians offer have very little influence with me, especially when they are of that kind which always take Scripture according to the letter and the external meaning. And yet I have never seen any Theologian except the Socinians, who was so dense as not to perceive that Holy Scripture very frequently speaks of God in human fashion, and expresses its meaning in Parables. As to the contradiction which you endeavour to show, in vain (in my opinion at least), I believe that you mean by Parable something entirely different from what is commonly meant. For who has ever heard that he who expresses his ideas in Parables strays from his meaning? When Micah said to King Ahab that he had seen God sitting on His throne, and the heavenly hosts standing on the right and on the left, and that God asked them who would deceive Ahab, this was certainly a Parable, by which the Prophet sufficiently expressed the chief point which he had to reveal in God's name on that occasion (which was not one for teaching sublime dogmas of Theology), so that he in no way strayed from His meaning. So also the other Prophets, at the command of God, revealed the Word of God to the people in this way, as the best means, though not as that which God enjoined, of leading the people to the primary object of Scripture, which according to the word of Christ himself consists, of course, in loving God above all things and one's neighbour as oneself. High speculations, I believe, concern Scripture least. As far as I am concerned, I have learned none of the eternal attributes of God from Holy Scripture, nor could I learn them.

As to your fifth argument (namely, that the Prophets have made manifest the Word of God in such a manner), since truth is not opposed to truth, it only remains for

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me to show (as anyone may judge who understands the method of proof) that Scripture, just as it is, is the true, revealed Word of God. Of this I can have no Mathematical Proof, except by Divine Revelation. For this reason I said, I believe, but not I know mathematically, that all things which God revealed to the Prophets, etc., since I firmly believe, but I do not know mathematically, that the Prophets were the intimate counsellors and the faithful messengers of God; so that in all that I have asserted there is no contradiction whatsoever, whereas on the contrary not a few may be found on the other side.

As to the rest of your letter, namely, where you say Lastly, the supremely perfect Being knew, etc., and what you then adduce against the example about the poison, and, lastly, what concerns the Appendix, and what follows, I say that they do not concern the present question.

As to the Preface by L. M., it is therein certainly shown what points Descartes should still have proved in order to construct a sound proof of the Freedom of the Will, and it is added that I favour the contrary opinion, and how I do so. This perhaps I shall explain in its proper time but I have no mind for it now.

But I have not thought about the work on Descartes, since the time when it appeared in the Dutch language, nor have I given it further consideration: and this not without a reason, which it would take long to recount here. So there remains nothing more to say but that I am, etc.

[SCHIEDAM, 28 Jan. 1665.]

LETTER XXII WILLIAM VAN BLYENBERGH

To the Very Illustrious Mr. B. D. S.

Reply to the Preceding.

SIR AND WORTHY FRIEND,

I received your letter of the 28th January in due course, but affairs other than my studies prevented

me from answering it sooner. And as your letter was sprinkled here and there with very touchy reproofs, I hardly knew what to think of it. For in your first letter of the 5th January you offered me your friendship resolutely and heartily, with the assurance that not only was my letter of that time very welcome to you but that subsequent letters would be so too. Indeed I was requested in a friendly way to bring forward freely any other difficulties which I might be able to raise. This I did somewhat more extensively in my letter of the 16th January. To this I expected a friendly and instructive answer in accordance with your own request and promise. But I received on the contrary one which does not savour of too much friendship, stating that no proofs, however clear they may be, avail with me, that I do not understand Descartes' meaning, that I confuse material with spiritual things too much, etc., so much so, indeed, that our correspondence could no longer serve for our mutual instruction. To all which I answer very friendly that I certainly do believe that you understand the above mentioned things better than I do, and that you are more accustomed to distinguish the corporeal things from the spiritual. For in Metaphysics, which I am only now beginning, you have already climbed to a high rung, and therefore I sought to insinuate myself in your favour so that I might receive instruction. But I never thought of giving offence by candid objections. I thank you heartily for the trouble you have taken with both letters, and especially with the second, from which I grasped your meaning more clearly than from the first. Nevertheless, I cannot give it my assent, unless the difficulties which I think I still find therein are removed for me. And this neither need be, nor can be, a ground for offence. For it is a great defect in our understanding to assent to a truth without having such grounds for our assent as are necessary.

Even if your conceptions are true, I may not assent to them, as long as I still have reasons for obscurity or doubt, even if these doubts arise, not from the thing as you present it, but from the imperfection of my understanding. And since you know this fully, let it not be taken amiss if I again formulate some objections, as I am obliged to do as long as I cannot clearly grasp the thing. For I do so with no other object than that of discovering the truth, and not with the intention of distorting your meaning against your intention. And therefore I beg you to give me a friendly answer to these few questions.

You say that nothing has more essence than the Divine will and power allow, and in fact give to it, and when we consider the nature of a man who experiences the desire for pleasure and we compare his present desires with those of the pious or with those which he himself had another time, then we assert that the man is deprived of a better desire, because we judge then that the desire of virtue pertains to him. This we cannot do if we consider the nature of God's decree and understanding. For in relation to this the better desire belongs no more to that man's nature at that time than it does to the nature of the Devil or of a stone, etc. For although God knew both the past and the present state of Adam, God did not therefore conceive that Adam was deprived of the past condition, that is, that the past condition belonged to his present nature, etc. From these words it seems to me to follow clearly, though subject to correction, that according to your opinion, nothing else pertains to a being but what it has at the moment when it is apprehended. That is, if I have a desire for pleasure, then this desire belongs to my essence at that time, and if I have no desire for pleasure then the not-desiring belongs to my essence at the time when I do not desire. Consequently also it must follow without fail that in relation to God I include as much perfection (different only in degree)

in my actions when I have a desire for pleasures as when I have no desire for pleasure, when I practise all sorts of rascalities as when I practise virtue and righteousness. For at that time there belongs to my essence only as much as I do since, according to your assertion, I can do neither more nor less than corresponds to the essence which I have in fact received. Now since the desire for pleasure and villainy belongs to my essence at the time when I practise them, and at that time I receive that essence and no more from the Divine power, so the Divine power only requires of me such actions. Therefore it seems to me to follow clearly from your statement that God desires villainies in one and the same way as He desires these actions which you call virtuous. Let it now be granted that God, as God, and not as judge, gives to the pious and to the ungodly such essence, and only as much essence, as He wishes them to exercise. What reasons are there then that God should not desire the action of the one in the same way as the action of the other? For, since God gives to each one the quality for his action, it follows undoubtedly that He desires in the same way but also as much from those to whom He has given less, as from those to whom He has given more. Consequently, God in respect of Himself wills in the same way more or less perfection in our actions, the desire for pleasures and the desire for virtues, all alike, so that they who practise villainies must necessarily practise villainies because at that time nothing else pertains to their essence, just as he who practises virtue practises virtue because the power of God has willed it that this should belong to his essence at that time. Again, therefore, I cannot but think that God wills both, and in the same way, villainy as well as virtue. And inasmuch as He wills both, He is the cause of both, of the one as well as of the other, and to that extent, both must LETTER XXII—FROM BLYENBERGH 1665 please Him. It is too hard for me to conceive this of God.

I see, indeed, that you say that the pious serve God, but from your writings I can only understand that to serve God is merely to do such actions as God has willed us to do, and this, you write, the wicked and the licentious also do. What difference is there, then, in relation to God, between the service of the pious and of the ungodly? You also say that the pious serve God, and by service continually become more perfect, but I cannot grasp what you mean by "becoming more perfect," nor what is meant by "continually become more perfect." For both the ungodly and the pious receive their being, and also their preservation or continual creation of their being, from God as God, not as judge, and both fulfil the will of God in the same way, namely, in accordance with God's decree. What difference can there be, then, between the two essences in relation to God? For "becoming continually more perfect" does not proceed from their action, but from the will of God, so that if the ungodly by their actions become more imperfect, this does not proceed from their actions but solely from the will of God. And both only fulfil the will of God. So there can be no difference between these two beings in respect of God. What reasons are there, then, why these should continually become more perfect by their actions, and the others perish in their service?

But you seem to place the difference between the actions of the one and of the other in this, that the one includes more perfection than does the other. I believe confidently that therein lurks my error or yours, for I cannot find in your writings any rule according to which a thing is called more or less perfect, except in so far as it has more or less essence. Now if this is the standard of perfection, then, in relation to God's will, crimes are

always as acceptable to Him as the actions of the pious. For God, as God, that is, in relation to Himself, wills them in the same way, since both proceed from His decree. If this is the only standard of perfection, errors can only improperly be so called, but in reality there are no errors, in reality there are no crimes, and everything only embraces that and such essence as God has given it, which be it what it may, always includes perfection. I confess that I cannot clearly understand this. And you must forgive me when I ask whether murder is as pleasing to God as almsgiving, or whether in relation to God stealing is as good as being righteous. If not, what reasons are there for it? If yes, what reasons can there be which should induce me to do the one action which you call virtuous rather than the other? What law or rule forbids me the one rather than the other? If you say, the law of virtue itself, I must certainly confess that I find in what you say no law according to which virtue can be regulated or recognized. For everything depends inseparably on the divine will and therefore the one action is as virtuous as the other. And I do not understand your remark that one must act from love of virtue, as I cannot grasp what you mean by virtue or the law of virtue. You say, indeed, that you shun vice or villainy because they are repugnant to your special nature, and would lead you astray from the divine knowledge and love. In all your writings, however, I find not a single rule or proof relating to this. Indeed forgive me that I must say that the contrary seems to follow from your writings. You avoid the things which I call wicked because they are repugnant to your special nature, but not because they involve vice. You refrain from doing them just as we refrain from eating food which disgusts our nature. Surely he who avoids evil things merely because they are repugnant to his nature has little to boast of his virtue.

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Here again the question arises if there were a mind to the special nature of which the pursuit of pleasures and villainies was not repugnant but rather agreeable, is there any ground for virtue which must induce him to do good and avoid evil? But how is it possible that a man should be able to relinquish the desire for pleasure when this desire at that time pertains to his essence and he has actually received it from God and cannot relinquish it?

I also cannot see this conclusion in your writings, that those actions which I call villainies would seduce you from the knowledge and love of God. For you have only done what God willed, and you could not do more because, at this time, nothing more was given to your essence by the divine power and will. How can an action so constituted and dependent make you stray from the love of God? To stray is to be confused, and not to be dependent, and this, according to your assertion, is impossible. For whether we do this or that, whether we exercise more or less perfection we have received it for our essence, at the time, immediately from God. How then can we go astray? Or do I not understand what is meant by error? However here, and here alone, must lurk the cause of my or of your misapprehension.

Here I would say and ask many more things. First, whether thinking substances depend on God in a different way from lifeless substances? for although the thinking beings include more essence than do the lifeless, still do they not both have God and God's decrees as the source of their motion in general, and of such motions in particular? And consequently, inasmuch as they are dependent are they not dependent in one and the same way? Secondly, since you do not allow to the soul the freedom which Descartes has ascribed to it, what difference is there between the dependence of thinking

CORRESPONDENCE OF SPINOZA

and of soulless substances? And if they have no freedom of will, in what way do you conceive dependence upon God? And how is the soul dependent on God? Thirdly, if our soul has no freedom, is not our action properly God's action and our will really God's will?

And I could ask many other questions but I dare not request so much from you. I await first of all your answer to the foregoing pages only. Perhaps I shall be able by means of it to understand your opinion better, and then discuss this thing with you some time more fully by word of mouth.

For when I have received your answer, then as I shall have to go to Leyden a few weeks hence, I will give myself the honour of greeting you sometime in passing, if it is agreeable to you. Trusting to this, I say, after hearty greetings, that I remain

Your devoted servant, WILLIAM v. BLYENBERGH.

DORDRECHT, 19 Feb. 1665.

If you do not write to me under cover, please write to Willem van Blyenbergh, Grain-broker, near the great Church.

P.S.—I forgot in my great haste to insert the question, whether by our precaution we cannot prevent what would otherwise happen to us.

LETTER XXIII

B. D. S.

To the Very Learned and Eminent WILLIAM VAN BLYENBERGH.

Reply to the Preceding.

SIR AND FRIEND,

I have received two letters from you this week: the one, of the 9 March, which served merely

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to inform me of the other, of the 19 February, which was sent to me from Schiedam. In this last one I see that you complain about what I had said that no proof can avail with you, etc., as if I had said this in reference to my reasoning because it did not satisfy you immediately. This is far from my meaning. But I had in view your own words, which are as follows: and if ever it happen that, after long consideration, my natural knowledge seems either to conflict with this word or not fully, etc., this word has so much authority with me that I rather doubt the conceptions which I think are clear than, etc. Therefore, I did no more than repeat your words briefly, and I do not believe that I gave the smallest ground for offence thereby, especially as I only adduced them as an argument to show our great difference.

Moreover, since at the end of your second letter you wrote that your only wish is to continue in faith and hope, and that you were indifferent to the rest which we persuade ourselves about our natural understanding, I thought as I still think, that my writing could be of no use, and that therefore it was more advisable for me not to neglect my studies (which I must otherwise discontinue for so long) for the sake of things which can be of no use. And this does not contradict my first letter. For then I regarded you as a Philosopher pure and simple, who (as many, who consider themselves Christians, admit) has no other touchstone for truth than the natural understanding, and not theology. But you have taught me differently, and shown me that the foundation on which I meant to build our friendship, was not laid as I had thought.

Lastly, as regards the rest, this happens very commonly in the course of disputation without on that account going beyond the bounds of courtesy, and for this reason I have taken no notice of such things in your second letter and will also do likewise with this one.

So much about your displeasure, in order to show that I have given no ground for it, much less for thinking that I cannot bear contradiction. I will now turn to your objections, in order to reply to them.

First then, I say that God is absolutely and effectively the cause of everything that has essence, be it what it may. Now, if you can show that Evil, Error or Villainy, etc., is something which expresses essence, then I will fully admit to you that God is the cause of villainy, evil, error, etc. I think that I have sufficiently shown that that which gives its form to evil, error, or crimes, does not consist in anything which expresses essence, and that therefore it cannot be said that God is the cause thereof. For example Nero's matricide, in so far as it contained something positive, was not a crime: for Orestes too did the same outward deed and had the same intention of killing his Mother, and yet he is not blamed, at least not in the same degree as Nero. What then was Nero's crime? Nothing else than that by this deed he showed that he was ungrateful, unmerciful, and disobedient. And it is certain that none of these things expresses any essence, and therefore God was not the cause of them, although He was the cause of the act and the intention of Nero.

Further, I should like to remark here that while we are speaking philosophically we must not use the modes of expression of Theology. For Theology has usually, and not without reason, represented God as a perfect man; therefore it is quite appropriate in Theology that it should be said that God desires something, that God is affected with weariness at the deeds of the ungodly, and with pleasure at those of the pious. But in Philosophy, where we clearly understand that to apply to God the attributes which make a man perfect, is as bad as to want to apply to a man those which make perfect an elephant or an ass, these and similar words have no

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place; and we cannot use them here without thoroughly confusing our conceptions. Therefore speaking philosophically we cannot say that God demands something from someone, or that something wearies or pleases Him, for all these are human attributes, which have no place in God.

Lastly, I would like to remark that although the actions of the pious (that is, of those who have a clear idea of God, in accordance with which all their actions and thoughts are determined) and of the ungodly (that is, of those who have no idea of God, but only confused ideas of earthly things, in accordance with which all their actions and thoughts are determined) and lastly, of everything that exists, proceed necessarily from God's eternal laws and decrees, and continually depend on God, nevertheless they differ from one another not only in degree but also in essence. For although a mouse is as dependent on God as an angel is, and sadness as much as joy, yet a mouse cannot therefore be a kind of angel, or sadness a kind of joy. And herewith I think that I have answered your objections (if I have rightly understood them, for I am sometimes in doubt whether the conclusions which you draw do not differ from the Proposition which you undertake to prove).

This however will appear more clearly if, following these fundamental notions, I answer the questions which you proposed to me. The first is whether killing is as agreeable to God as alms-giving. The second is, whether in relation to God stealing is as good as being righteous. The third is whether, if there is a mind to whose especial nature the pursuit of pleasure and of crime is not repugnant but acceptable, there is any ground for virtue which would necessarily persuade it to do good and avoid evil?

To the first I say that (speaking philosophically) I do not know what you mean by agreeable to God. If the

question is whether God does not hate the one and love the other, or whether the one has not done God harm, and the other a favour, I answer No. And if the question is this, whether men who slay and those who give alms are not equally good or perfect, I again say No.

With regard to your second, I reply, if good in relation to God means that the righteous man does some good to God, and the thief some evil, I answer that neither the righteous nor the thief can cause either pleasure or weariness to God. But if the question is whether both actions in so far as they are something real and caused by God, are not equally perfect, then I say that if we consider the actions alone, and in such a way, it may well be that they are equally perfect. If you then ask whether the thief and the righteous are equally perfect and blessed, I answer No. For by a righteous man I understand one who firmly desires that each shall possess his own. I show in my Ethics (which I have not yet published) that this desire arises necessarily in the pious from the clear knowledge which they have of themselves and of God. And since the thief has no such desire, he necessarily lacks the knowledge of God and of himself, that is, the chief thing which makes us men. If you also ask what can induce you to do that action which I call virtuous rather than the other, I reply that I do not know which out of the infinite ways that there are, God makes use of in order to determine you to such actions. It may be that God has impressed upon you a clear idea of Himself so that you forget the world for love of Him, and love the rest of mankind as yourself, and it is clear that such a constitution of mind is opposed to everything else which is called evil, and therefore they cannot exist in the same subject. But this is not the place to explain the fundamentals of Ethics, or to prove all that I say, for my present object is simply to answer your objections and to defend myself against them.

Lastly as regards your third question, it supposes

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a contradiction, and is just as if somebody asked me it it accorded better with the nature of some one that he should hang himself, would there be any reasons why he should not hang himself? However, suppose it is possible that there is such a nature. Then I say (whether I admit the freedom of the will or not) that if someone sees that he can live better on the gallows than at his own table, he would act most foolishly if he did not go and hang himself. And he who saw clearly that he would in fact enjoy a more perfect or better life or essence by pursuing crimes rather than by following virtue, would also be a fool if he did not pursue them. For in relation to such a perverted human nature crimes would be virtuous.

As to your other question, which you added at the end of your letter, since one could ask an hundred such questions in an hour without arriving at any conclusion about anything, and since you yourself do not press for an answer I will leave it unanswered.

And for the present I will only say that I shall expect you about the time which you appointed with me, and that you will be very welcome. But I should like it to be soon, because I already intend to go to Amsterdam for a week or two. In the meantime, I remain, with cordial greetings,

Your devoted Servant, B. DE SPINOZA.

Voorburgh, 13 March 1665.

LETTER XXIV WILLIAM VAN BLYENBERGH
TO THE VERY ILLUSTRIOUS Mr. B. D. S.

Reply to the Preceding.

SIR AND FRIEND,

When I had the honour of visiting you, time did not permit me to stay longer with you, still less did

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my memory enable me to retain what was discussed, although, as soon as I had left you, I mustered all my thoughts in order to be able to retain what I had heard. For that purpose, when I reached my next stopping-place, I endeavoured by myself to commit your opinions to paper, but found then that I had not in fact retained even a quarter of our discussions. And therefore you must excuse me, if I weary you once more by asking you something about things concerning which I did not clearly understand your views, or did not retain them well. I wish I could repay you for your trouble by doing you some service. They were these:

First, whenever I read your *Principles and Metaphysical Thoughts* how can I distinguish between what you state according to the views of Descartes and what is stated in accordance with your own views?

Secondly, is there really such a thing as error, and in what does it consist?

Thirdly, why do you state that the will is not free?

Fourthly, why do you let Meyer say in the Preface that you admit indeed that there exists in Nature a thinking substance; but yet deny that this constitutes the essence of the human soul; but think that just in the same way as extension is infinite, so thought also is not finite, and therefore just as the human body is not absolute but is only a finite part of extension existing in a certain way, according to the laws of extended nature through motion and rest, so also the human soul is not absolute, but only a finite part of thought determined in a certain way by ideas, in accordance with the laws of thinking nature, and it is concluded that it must exist as soon as the human body begins to be real. From these words it seems to me to follow that just as the human body is composed of thousands of small bodies, so also the human spirit is composed of thousands of thoughts: and just as the human body, when it breaks up, returns and is again resolved into the thousands of bodies, of which it was

composed, so also our spirit when it leaves the body is resolved into the manifold thoughts of which it is composed. And just as the separated bodies of our human Body do not remain united with each other, but other bodies come between them, so also it seems to follow, that when our spirit breaks up, the innumerable thoughts of which it was composed, are no longer united but separated. And just as our bodies when they disintegrate remain indeed bodies but not human bodies, so also after death our thinking substance is so disintegrated that our thoughts or thinking substances remain, but their essence is not the same as when they were called a human spirit. Hence it continues to appear to me as though you stated that man's thinking substance is changed and is dissolved like corporeal substance, indeed that some even, as you (if I remember rightly) stated of the wicked, are entirely annihilated, and retain no thought whatever. And as Descartes, according to Meyer's statement, only supposes that the soul is an absolutely thinking substance, so it seems to me that both you and Meyer are only making suppositions for the most part. Therefore I do not clearly grasp your meaning in these things.

Fifthly, you stated, both in our conversation and in your last letter of the 13th March, that from our clear knowledge of God and of ourselves there arises our steadfast desire that each should continue to possess his own. But you have still to explain in what way the knowledge of God and of ourselves makes us have a steadfast desire that each should possess his own, that is, in what way the knowledge of God induces or obliges us to love virtue and to avoid those actions which we call wicked, and whence it comes about (since according to your statement, murder and theft contain something positive, just as alms-giving does) that killing does not include as much perfection, blessedness and happiness

as does alms-giving. But should you perchance say, as you say in your last letter of the 13th March, that this question belongs to the Ethics and that it is discussed there by you, then, indeed, since without an explanation of this question and of the preceding questions I am unable to understand your meaning clearly, and am left with absurdities which I cannot reconcile, I would ask you kindly to give me a fuller answer to them and especially to state some of your principal Definitions, Postulates and Axioms on which your Ethics, and especially this question, is based. Perhaps the trouble will alarm you, and you will excuse yourself, but I beseech you to satisfy my request this time, since without the solution of this last question I shall never be able to understand your real meaning. I wish I could offer you some recompense for your service. I dare not limit you to one or two weeks, I only beg you to let me have your answer here before your departure to Amsterdam. By doing so you will put me under the greatest obligation, and I shall show that I am and remain, Sir,

Your most devoted servant, WILLIAM VAN BLYENBERGH.

DORDRECHT, 27 March 1665.

To Mr. Benedictus de Spinoza, Staying in Voorburgh.

Per couverto.

LETTER XXV

HENRY OLDENBURG

To the Very Illustrious Mr. B. D. S.

VERY ILLUSTRIOUS SIR AND MY DEAREST FRIEND,

I rejoiced greatly when I understood from recent letters of Mr. Serrarius that you are alive and well and remember your Oldenburg. But at the same time I strongly blamed my fortune (if it is right to use such a

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word) which has brought it about that for a space of so many months I have been deprived of that very pleasant intercourse with you which I enjoyed before. I must blame the great number of my affairs, as well as an excess of domestic calamities, for my very great devotion and loyal friendship for you will always stand on a firm footing, and endure unshaken. Mr. Boyle and I frequently speak of you, your learning and your profound reflections. We should like the fruit of your mind to be brought forth and entrusted to the care of learned men, and we are confident that you will fulfil our expectation in this matter.

There is no reason for printing Mr. Boyle's discussion on Nitre, and on Firmness and Fluidity in your country: for it has already been printed in Latin here, only there is no opportunity of transmitting copies to you. I pray you, therefore, not to allow any printer in your country to attempt such a thing. Boyle, too, has published an excellent Treatise on Colours, both in English and in Latin, and also an Experimental Account of Cold, of Thermometers, etc., wherein there are many excellent things, many new things. Nothing but this unfortunate war prevents the transmission of the books to you. There has appeared also a certain excellent Treatise on Sixty Observations with the Microscope, wherein many things are asserted boldly, but Philosophically (indeed, according to Mechanical Principles). I hope that our Booksellers will find a way of despatching copies of all these to your country. I long to receive from your own hand what you have done recently, or what you have now in hand. I am

Your most devoted and affectionate
HENRY OLDENBURG.

LONDON, 28 April 1665.

LETTER XXVI

B. D. S.

To the Very Noble and Learned Mr. HENRY OLDENBURG.

[Reply to the Preceding.]

Most honourable Friend,

A few days ago a certain friend of mine said he had been given your letter of the 28th of April by an Amsterdam Bookseller, who doubtless received it from Mr. Ser. I rejoiced greatly at length to be able to know from you yourself that you are well and as kindly disposed towards me as before. I, for my part, whenever opportunity arose, did not fail to ask Mr. Ser. and Christian Huygens, Z.D., who also told me that he knew you, about you and your health. From the same Mr. Huygens I also understood that the very learned Mr. Boyle is alive and has published in English that excellent Treatise on Colours, which he would lend me if I were versed in English. I rejoice therefore to know from you that this Treatise, together with the other on Cold and on Thermometers, of which I had not yet heard, have been presented with Latin citizenship, and endowed with civic rights. The book on the observations with the Microscope is also in the possession of Mr. Huygens, but unless I am mistaken it is in English. He has told me many wonderful things about these microscopes and also about certain Telescopes, constructed in Italy, with which they could observe eclipses in Jupiter caused by the interposition of his satellites, and also a certain shadow on Saturn, as if made by a ring. On the occasion of these things I cannot wonder sufficiently at the rashness of Descartes, who says that the reason why the Planets next to Saturn (for he thought that its projections were Planets, perhaps because he never saw them touch Saturn) do not move may be

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because Saturn does not rotate round its own axis. For this does not agree with his principles, and he could very easily have explained the cause of the projections from his principles, if he had not laboured under a prejudice, etc.

[Voorburg, May 1665.]

LETTER XXVII

B. D. S.

To the Very Courteous and Honourable Mr. WILLIAM VAN BLYENBERGH.

Reply to Letter XXIV.

SIR AND FRIEND,

When I received your letter of the 27th March, I was on the point of starting for Amsterdam, and therefore left it at home but half read, with the intention of answering it on my return; for I thought it only contained things relating to the first questions. But on reading it through afterwards I found its contents to be quite different, and that it asked not only for a proof of the things which I had caused to be stated in the Preface with the sole aim of making known to everybody my opinions and thoughts and not of proving or of explaining them, but also the proof of a large part of Ethics, which as everyone knows, must be based on Metaphysics and Physics. And therefore I could not persuade myself to satisfy the request, but I wished to have an opportunity of asking you orally and in the friendliest way to desist from your request, and then I would at the same time give you the reason for my refusal, and lastly show you that these things do not contribute anything to the solution of your first question, but that, on the contrary, these things for the most part depend on that question. So that it is far from true that my view regarding the necessity of things

CORRESPONDENCE OF SPINOZA

cannot be understood without the solution of these new questions, since the solution of these and what pertains thereto cannot be grasped without understanding first the necessity of things. For, as you know, the necessity of things touches Metaphysics, and the knowledge of this must always come first. But before I could get the desired opportunity I received this week yet another letter under cover from my host which seems to show some displeasure caused by the long delay, and which has therefore compelled me to write these few lines in order to express briefly my decision and intention, as I have now done. I hope that when you have considered the matter you will willingly desist from your request, and will nevertheless retain your kindly disposition towards me. I for my part will show, in all ways that I can and may, that I am

> Your well-disposed Friend and Servant, B. DE SPINOZA.

To Mr. WILLIAM VAN BLEYEN BERGH,
GRAIN-BROKER,
AT DORDRECHT,

NEAR THE GREAT CHURCH.

PT.

Voorburg, 3 June 1665.

LETTER XXVIII

B. D. S.

To the Very Learned and Expert Mr. JOHN BOUWMEESTER.

EXCELLENT FRIEND,

I do not know whether you have entirely forgotten me, but many things concur in suggesting the suspicion. First, when I was on the point of setting out for my journey I wished to say good-bye to you, and thought that, as you yourself had invited me, I should without doubt find you at home. I found you